STEM and the Studio: Understanding the role of Studio Schools in English Education



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Dedicated to the memory of my mama, Rupinder “Ruby” Randhawa, who was taken too soon.

I miss you every moment of every day and wish you could have been a part of this journey.

Thesis abstract

This thesis was concerned with building an understanding of the evolving role of Studio Schools (a novel and flexible model of 14-19 education) in England. Relatively little has been written about the origins, rationale for and the intended role of the Studio Schools, and how this evolved in the fast-paced, everchanging landscape of education policy. In particular, this study focused on those Studio Schools that offer STEM specialisms (Science, Technology, Engineering, and Mathematics), which are over seventy five percent of the Studio Schools open today. The goal was to understand whether and how the choice to develop STEM skills may have impacted the role, and indeed what is the role that these schools play, not only in their local communities but also the wider education landscape.

The study employed a multiple case study approach in which qualitative data were collected via semi-structured interviews with the architects of the Studio School model, key government officials, and diverse actors (school leaders, school sponsors, employer partners, staff and students) from four STEM-focused Studio Schools. Additionally, a document analysis was conducted with key government policies, reports, debates and acts (pertinent to the time when the schools were set up and launched) and documents obtained from the schools themselves. A conceptual framework of policy enactment (Ball, Braun, &Maguire, 2012) was utilised to analyse the data and to situate the findings in English educational policy.

Altogether, the findings from this study are indicative of a disconnect between the way the Studio Schools have been advocated for and positioned in policy rhetoric and text, and their intended and actual role in the communities in which they are embedded. The viewpoints of the architects and supporters of Studio Schools offered detailed insight into the envisioned role of the Studio Schools as a point of comparison for their contemporary role. The envisioned roles of the Studio Schools were demonstrated to be 'confused', serving multiple roles without any particular emphasis on one. Studio Schools were originally intended to tackle student disengagement, while appealing as an aspirational pathway to successful careers, prepare students for the world of work and serve as champions of vocational education. Over time, however, the advocacy of these roles and the structure of the Studio Schools model itself were changed by the shifting priorities in key policy ideas to do with the personalisation of education, employability, changing emphasis of the vocational offer in lower secondary schools, curricular restrictions and collaborative partnerships between schools.

Designed to be purposively fluid, Studio Schools were meant to reflect their local labour markets in their offer of specialisms and links to work. That this is not necessarily put into practice, however, is made clear by the particularly high proportion of Studio

Schools offering STEM specialisms. When considering, from the perspective of school leadership at the four participating schools, the rationale for offering STEM-focused specialisms, the schools in this study were shown to be involved in a complex interplay of policy, practice and purpose. The senior leadership intended for their schools to be key contributors of STEM skills for the economy, to be challengers to the provision of secondary STEM provision and also wanted to challenge policy emphasis on the purpose and role of STEM (and wider) education by giving a voice to the various diverse pathways to a career in STEM. In addition, STEM specialisms were considered aspirational in nature, facilitating an easy mechanism for marketing the Studio Schools in their local communities. Despite being constrained by policy and cost, these leaders persisted in their offer of STEM specialisms that would best prepare students for diverse careers in STEM.

Further insight into the actual role of the Studio Schools in their respective communities, and the impact of the offer of a STEM specialism upon that role, was provided by the diverse voices of all the key actors in the schools. The Studio Schools' roles, in practice, were not all enacted as envisioned, yet were as wide-ranging – disregarding their role as champions of vocational education while providing 'second chances' for students and staff alike, a 'community' feel, and trying to offer a clear pathway to a successful career in STEM. A key impact of the STEM offer appeared to be that it raised aspirations for both students and their local communities by preparing students for contemporary patterns of work and life that are increasingly influenced by science and technology. It also aided in shaping the role of reengagement with both STEM subjects and secondary education through the innovative delivery of the curriculum that was pursued at the schools.

It was shown that the Studio Schools were on a journey of enactment of their own roles, with shifts being driven by the influences of internal Studio School policy to focus on STEM and the external landscape of English policymaking. The Studio Schools and their roles in education mirrored the wider debates surrounding competition, narrowing accountability measures, curricular focus, and a changing purpose of education as reflected in educational policies. They can therefore be regarded as a cautionary tale of not only the disconnect between policy and practice, but also of the unintended consequences of the shifting goalposts of fast policymaking and everchanging foci on the purpose of education. The findings are of interest not just to policymakers, but school leaders, staff, and all those interested in challenging the status quo of the purposes and delivery of secondary education.

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List of Abbreviations

A-level	Advanced Level
AP	Alternative Provision
BTEC	Business and Technology Education Council
CPVE	Certificate of Pre-Vocational Education
CTC	City Technology College
DTI	Department for Trade and Industry
EBacc	English Baccalaureate
EBP	Education Business Partnerships
FE	Further Education
GCSE	General Certificate of Secondary Education
GM	Grant- Maintained
GNVQ	General National Vocational Qualification
KS4	Key Stage 4
KS5	Key Stage 5
LA	Local Authority
LEA	Local Education Authority
MAT	Multi Academy Trust
MSC	Manpower Services Commission
SLT	Senior Leadership Team
STEAM	Science, Technology, Engineering, Art and Mathematics
STEM	Science, Technology, Engineering, and Mathematics
TVEI	Technical and Vocational Education Initiative
UTC	University Technical College

CHAPTER 1 - Introduction

Secondary education in England has experienced a recent period of intense diversification in school models(West & Bailey, 2013; West & Ylönen, 2010) including the passing of the *Academies Act* (2010) and the subsequent development of the free school movement (Walford, 2014). This ever-increasing emphasis on a move to a market model of education (Miller, 2011) and enhanced school choice has resulted in new models of education in both technical and academic settings. Studio Schools[1] are one such development that are considered a part of the re-structuring of 14-19 education in England (Spours et al., 2017). Some believe Studio Schools present a disruption and challenge (Cook et al., 2016) to the schools and Further Education (FE) sectors alike by attempting to blend an academic curriculum with vocational specialisms. However, despite being 10 years old, and having enjoyed government support, there remains limited research, even in terms of evaluation studies, that has been conducted to gain an in-depth understanding of the Studio School model, the development of their ethos or even their impact on student outcomes. The extant body of inquiry into this topic has been largely non-academic (think tanks and research foundations) or journalistic in nature. Where there has been more recent work undertaken to provide an overview of the student population, curricular offerings, and contributions to the 'cycle of decline' of the model (Cook et al., 2016; Thorley, 2017), there has been limited focus on generating an in-depth understanding of the model, or even understanding the role of Studio Schools from the perspective of many of the voices at the schools. The academic research conducted on Studio Schools has focused on isolated

[1] There are certain essential elements that make a school a Studio School: they should be *small schools* (a maximum of 300 students), *non-selective* and *striving for academic excellence*, and incorporate an *employability and enterprise skills* (the CREATE framework), a *personalised curriculum*, *practical learning*, and *real work experiences* (Studio School Trust, 2010).

elements of the model such as the implementation of project-based learning (van Urk, 2016) or the development of employability skills (Robson et al., 2018), and has not considered the whole model and its enactment in the secondary school landscape. Journalistic coverage has been largely focused on the problems that have beleaguered the model in the form of high truancy (Grant, 2016), a lack of student recruitment leading to institutional closures (Exley, 2016; Roberston, 2016), and an account of the funding pressures (Camden, 2018). This lack of in-depth research stands in stark contrast to the vast rafts of work being commissioned to study other 14-19 institutions, such as University Technical Colleges (UTCs) (Dominguez-Reid & Robinson, 2016; Kettlewell et al.,2017; McCrone et al., 2018). Given that Studio Schools form an integral part of the spectrum of school choices that young people and parents are being offered (Department for Education, 2013), it is important to start building a robust understanding of these institutions and that is the aim of this research.

In addition, of the 24 Studio Schools that are open today,[2] over 75% percent have a STEM (Science, Technology, Engineering and Mathematics) - focused specialism.[3] It is worth noting that unlike UTCs, Studio Schools were never intended to have a headline singular focus on the development of STEM skills.[4] As such, it is important to understand how and why most of the Studio Schools that have opened have chosen to offer STEM-focused specialisms. These Studio Schools join the growing diversity and volume of STEM-focused

[2] This is the number of Studio Schools open in the 2019-2020 academic year. This trend has held over the past few years, despite the decline in the number of Studio Schools. For example, in the 2016-2017 academic year, when the data for this thesis was collected, there were 36 Studio Schools open. Of these 36 schools, again, over 75% of the Studio Schools offered a headline focus of STEM.

[3] The definition of what is included in STEM has been kept fairly broad in this research. Both GCSE and non-GCSE options have been used in the identification of qualifications and offer that would fall under the broad umbrella of STEM. Please see Chapter 2, Section 2.2 for further detail.

[4] For this research, when referring to STEM skills, the emphasis will be on STEM-focused qualifications as a proxy for 'skills'. This is explained in further detail in Chapter 2.

schools, clubs, and after-school programs, which the Royal Academy of Engineering has cautioned as being confusing for parents and young people alike to navigate and therefore effectively participate in (Morgan et al., 2016). Part of the analysis carried out in the research by Morgan et al. (2016) highlighted that there was a need to truly appreciate the value and purpose of specialisms that are STEM-related, and to understand what contribution 'exciting new forms (s) of provision' (ibid, p.19) such as UTCs and Studio Schools are making in the generation of STEM skills for the labour market, **if any**. Most STEM-focused provision directly linked to the labour market (the way it is in Studio Schools) has traditionally tended to reside within Further Education (FE) (Vignoles & Ilie, 2014), which makes the arrival of UTCs and Studio Schools disruptive of traditional patterns and demarcations of provision and marks them out as unusual institutions. It is important to understand the types of skills that these schools are developing, and why they have chosen to focus on these specialisms to better understand what makes them unique in their contribution.

Consequently, the overarching research question, with three operational questions, that have guided the qualitative research and analysis in this thesis are:

What is the evolving role of Studio Schools in English education?

a) What was the envisioned role of Studio Schools and what were the major policy ideas that have shaped this?
b) What key factors influenced Studio Schools to have a STEM specialism?
c) What role do Studio Schools play in the educational landscape and how does the adoption of a STEM specialism have an impact on this role?

1.1 Overview of the Thesis

This thesis is concerned with understanding the role that Studio Schools play in English education, especially those that have chosen to have a STEM specialism. The Studio School movement was conceived of in a different policy era to today, during a period of intense changes in English secondary education. It was therefore inevitable that the model and the individual schools themselves would have to adapt to survive in an ever-changing environment, potentially creating a shift in the narrative and intended goals of the model. Before understanding the current space occupied by Studio Schools in the English education landscape, it is therefore important to understand its envisioned role. Using Ball, Braun & Maguire's (2012) policy enactment framework as the conceptual underpinning, this study has sought to understand the influence of policy on the creation of the Studio School model grappling with how policy has shaped and changed their role, particularly those adopting a STEM-focused specialism. Given the high proportion of STEM-focused schools in the network, it is also important to understand why these Studio Schools have chosen to enact STEM policy in their schools, and how this itself may or may not have impacted the intended role and identity of the schools. The 'policy ensemble' (Ball et al., 2012) for the role of Studio Schools is explored, and the role and evolution of each of the STEM Studio Schools in this study is viewed through the narratives of key 'policy narrators' to capture the diverse ways in which this role may have been understood at the schools.

Chapter 2 provides a discussion of the Studio School model in detail, outlining the various elements of the model that make a school a Studio School, all the while providing an overview of the literature on models like Studio Schools to understand their place and context in English secondary provision. This is done via synthesising and critically evaluating the empirical literature in the different fields and subtopics around Studio Schools, which

includes but is not limited to vocational initiatives and employability in education, diversity and choice secondary schools, STEM policy in England and skills for the labour market and economy, the purpose of STEM skills development, aspiration in STEM, and STEM as a tool for re-engagement. More broadly, this chapter looks at the debates on the purpose and nature of STEM education and subsequent purpose of STEM skills to set the context as to why Studio Schools may have chosen to adopt STEM specialisms for their area. In providing an overview of the policy changes that have occurred before and since the birth of the Studio School model, the policies that are pertinent to the ethos and different elements of the model are put into clear focus.

Chapter 3 presents the study's research design and the rationale for the qualitative methodology, and the general methodological approaches to data collection and data analysis. Ball et al.'s (2012) policy enactment framework is introduced as the conceptual framing for this study, with its use inspired by Bathmaker's (2019) work on UTCs. The ideas of a policy ensemble and policy narrators are presented,[5] which have been used for the analysis of the data collected. The two phases of the research design have been described highlighting the exploratory and explanatory nature of the design. The sources of data underpinning this study, including semi-structured interviews, documents and artefacts are discussed, as are the data analysis techniques. Reflections on the ethical considerations for this type of research and the methodological rigour employed is examined as well. Finally, my researcher positionality is clarified in Section 3.8.

Chapter 4 examines the ethos of the Studio School model from the perspective of the architects of the model; this serves as the starting point for understanding the evolving

[5] Policy narrators: those involved in the 'interpretation, selection and enforcement of meanings' (Ball et al., 2012) of the policies in a school. This role is discussed in detail in Chapter 3 and is a role that is described as part of Ball et al.'s policy enactment framework.

role of the Studio Schools in the landscape of English education. This chapter makes a unique contribution to the literature. Whereas other studies have taken at face value what the intended role of the Studio School model were to be, few have worked with the creators of the model to understand their intentions, frustrations, and inspiration for the Studio School model. This chapter also brings to light the perspectives of the creators of the Studio Schools model (Ball et al., 2012) – with regards to the rationale for the development of STEM skills in individual Studio Schools; an important perspective to establish given the high number of STEM specialisms offered across the Studio School network. The policy ensemble of the Studio School is considered, by determining the key policies that would have had an influence on the model itself. The Studio School model is shown to be confused, trying to be everything to everyone all at once; one that has had to pivot its role and structure to come to fruition. It is highlighted that Studio Schools were initially supposed to tackle disengagement, while appealing as an aspirational pathway to successful careers, prepare students for the world of work and serve as champions of vocational education. It is also shown how the advocacy of the model has also changed in line with changing government priorities, shifting the role and place of the Studio Schools in secondary education in policy discourse.

Chapter 5 brings to life a rich contextual understanding of the schools in this study and their individual realities. Understanding these realities is important as they influence the policies surrounding the Studio School model at the ground level. This chapter is largely descriptive in nature; however, it provides a critical overview of the challenges the schools face in enacting and delivering the Studio School model, highlighting the variety of ways in which STEM specialisms have been developed. The schools in this study found themselves

limited in their implementation of the model and chosen specialisms due to a policy landscape that was increasingly at odds with the original ethos of the model.

Chapter 6 presents the key factors contributing to the selection of STEM-based specialisms across the schools in this study. These factors were identified from the perspective of the Senior Leadership Teams (SLTs) across the schools, who serve as 'policy narrators' (Ball et al., 2012) to understand how they brought the Studio School model to life. The SLTs were diverse in nature, and the cross-case understanding generated from the schools in this study provides a deep analysis of the reasons why the Studio Schools adopted a STEM specialism. The senior leaders in the schools were keen to contribute to the supply of STEM skills for the labour market, however they also expressed a desire to be a part of the national debate concerning STEM education via multiple routes, not least by attempting to improve their students' science capital.[6] These were leaders who were passionate about challenging policy surrounding the teaching of science and technology in secondary schools yet faced difficulties when acting as a disruptor in the face of high costs and an ever changing and constricting policy landscape. Moreover, it is evident that the STEM specialisms were considered an aspirational mechanism for recruitment.

Chapter 7 focuses on understanding the role and ethos of the STEM-focused Studio Schools with a view to understanding which elements of the Studio School model, and its intended goals, have been embraced and implemented and how traversing the policy landscape has had an impact on these decisions. The tool of 'policy narration' is extended to

[6] Science capital: Science capital is a conceptual tool developed by Archer et al. (2015), which allows for an understanding as to why some students will participate in science or not. Described as a 'holdall' containing all the science experiences and knowledge acquired while growing up (Archer et al., 2016), this conceptual tool is framed around eight key dimensions: scientific literacy, science-related attitudes, knowledge about the transferability of science, science media consumption, participation in out of school learning contexts, family science skills, knowing people in science related roles, talking about science in everyday life.

all key stakeholders at the school; Senior Leadership Teams, school sponsors, staff, employers and students, each narrating their version of what they considered the role of the school to be. These narratives (created within each school) were then compared and contrasted to create whole school narratives, which were then analysed cross-case. It is shown that the Studio Schools in this study are on a journey of enactment, unable to play all the roles envisioned at the same time or in the manner that they had been envisioned. This is driven by an interplay of the external policy landscape and active choices made with regards to the specialism offer at the school The Studio Schools in practice are representative of a disconnect; one that has been shaped by external policies that advocated for Studio Schools differently to when they were first envisioned, and those policies that shaped the Studio School model. The Studio Schools in this study are shown to serve roles that go beyond the attainment of academic and vocational qualifications - they serve to develop the whole student. The impact of having a STEM specialism and the way it has shaped these roles has also been considered.

The thesis concludes with Chapter 8, which brings together and summarises the study's findings against the backdrop of the empirical literature and policy that were presented in earlier chapters. This chapter maps the Studio School model's journey from conception to enactment in the context of ever-changing policy scenarios. It reemphasises the factors contributing to the rationale for schools wanting to offer STEM skills as their headline specialisms, and how the enactment of the role of the Studio School has been impacted by the adoption of STEM themes. The role of the Studio Schools in practice poses questions for policy and highlights the importance of the attention that needs to be paid in not only the enactment of policies but how they are put together and even advocated for. Key recommendations are presented based on the lessons learned by the Studio Schools

about the practical and policy implications that new, innovative models of education need to consider to successfully navigate the English education policy landscape. The study's limitations and future directions are also discussed.

CHAPTER 2 - Background and Literature Review

This study has explored the development of the role that Studio Schools play in English education. In addition, it furthers our understanding of not only the types of STEM skills that are being developed in these schools but why. It has sought to examine if and how the adoption of these STEM specialisms impacted on the enactment of Studio School policy in relation to its role in secondary education, particularly in the context of what it was envisioned to be.

This chapter therefore serves two purposes. In the first half of this chapter, the structure of the Studio School model and its network is considered and discussed. An overview of the literature that exists on the model is presented highlighting the current lack of understanding, illuminating the gaps that this thesis seeks to fill. The second half of the chapter presents the context of this thesis in terms of historical and societal trends in English policy making in secondary education. It serves to highlight the shifts in policies and discourses from both New Labour and the Conservative-Coalition governments that have had an impact on the creation and subsequent of the Studio Schools model. To provide such a history of education policy is to provide something of a history of governments and their ideologies. The detailed and complex overview highlights that the Studio Schools idea and movement was born into a policy moment that had been crafted by discourses and policies that had been shaped by New Labour (particularly the years between 2000 -2010). Policy moments or as they are sometimes viewed, 'settlements' (Gale, 1999, p.394) will always be defined by the discourse of the dominant actors (in this moment, New Labour). It is important to acknowledge that these moments are temporary, and will shift with changing political discourse (a shift from New Labour to a Coalition government); and these moments

are always entirely context dependent .This particular policy moment or period relevant to Studio Schools is one that was shaped by both political and scholarly interest in cooperation rather than marketisation (albeit briefly), deeper employer engagement and a more focused approach to providing more meaningful work opportunities to students in secondary school. The Studio School model was therefore designed against the background of policies and initiatives that included but not limited to: *Every Child Matters, 14-19 Education and Skills*, the introduction of 14-19 Partnerships, an increased focus on enterprise education in schools, an emphasis on personalisation in learning, and even an increased emphasis on blending academic and vocational qualifications at the secondary school level; this is made obvious through the trajectory of policies presented in Section 2.4, and is also revisited in further detail in Chapter 4 (Section 4.3). It is important to keep this policy moment in mind, as since then there has been a significant shift in policies and ideologies, moving away from a model of cooperation and towards more competition and standardisation, against which Studio Schools would have to adjust and reposition themselves.

2.1 Understanding Studio Schools

The literature on Studio Schools is still fairly limited. The literature that does exist has not sought to understand the evolution of the role and place of Studio Schools in secondary provision in-depth, nor has it sought to understand the development of STEM skills in Studio Schools. There has been no concerted effort on behalf of the original architects of the model, or even the Department for Education (Department for Education, personal communication, March 4th, 2016) to carry out an in-depth evaluation of the effectiveness of the model, despite the high level of government support (Department for Education, 2012, 2013 & 2016a) and large investment (National Audit Office, 2017) that the schools have enjoyed:

> "Studio Schools benefit both business and young people - they are a brilliant way for employers to become involved in helping give young people what they need to get good jobs. They are aimed at children who learn in more practical ways and offer good qualifications alongside the kinds of skills employers want" (Michael Gove, former Secretary of State for Education, 2012) [7]

Described as a 'community-centered model'[8] (van Urk, 2016, p.32) serving the needs of local communities, the Studio School model was developed based on experience alone; a model of tried and tested components integrated into a single package (Studio Schools Trust, 2012a) without any evaluation of the package as a whole (van Urk, 2016). The first two Studio Schools were launched as pilot schools in 2010, however, scale-up of the model occurred before any evaluation was even completed:

> "It was a fairly superficial evaluation: it wasn't done over any length of time at all," said Nicoll. "I'm sure that's not too difficult to work out: the first two opened in 2010, and a year later there were already three or four others being approved. I don't know why they called it a pilot to be honest. Because by then they (government) had committed to the idea." (ex-Studio Schools Trust Chief Executive as cited in Graham, 2018)

After their launch in 2010, Studio Schools enjoyed a five-year period of exponential growth and political support (Department for Education, 2011, 2013), and even royal patronage (Studio Schools Trust, 2012a). Since 2015, however, Studio Schools, have experienced a 'cycle of decline' (Thorley, 2017, p.3), with no new Studio Schools being supported by the Department for Education since the 2017-2018 academic year (Robson et al, 2018). Figure 1 below illustrates the trajectory of the schools over the last 10 years.

[7] Retrieved from the BBC website: https://www.bbc.co.uk/news/education-18892984.

[8] In the field of Evaluation Science, a community-centered model is one designed to meet the needs of a community from within a community, rather than starting with a research framework that is created by researchers outside the community. (Wandersman ,2003, p.230).

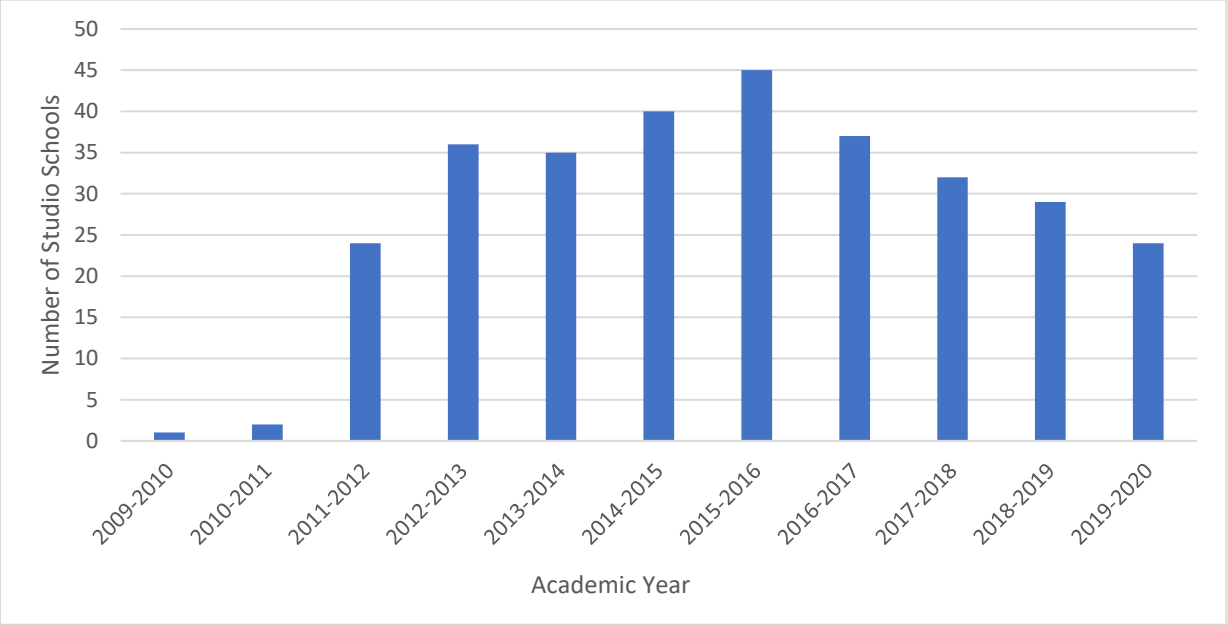


Figure 2.1: Total number of schools in the Studio Schools network per academic year. Data obtained via Edubase and www.gov.uk

Studio Schools are one element of a diverse range of institutions that cater for 14–19-year-olds in England only, alongside University Technical Colleges (UTCs) and Career Colleges. Individual Studio Schools were initially set up as free schools, [9] but have now converted or have been set up as academies in terms of their legal structure. Studio Schools were established to tackle the twin challenges of youth disengagement from secondary education and a shortage of transferable employability skills amongst those leaving secondary provision (Studio Schools Trust, 2012a). All research conducted thus far on the Studio School model has taken at face value these aims (or has only considered the government emphasis on the need for the schools), without any exploration of the policies and political discourse and sentiment that may have played a role in the development of the schools or shaped them since. There has also been no research that gives voice to the architects of the model, to understand, from their perspective, what they believed the role of the Studio Schools

[9] The evolution of Free Schools and Academies are discussed in further detail in Section 2.4.

model was meant to be in secondary education. This is one of the gaps that this research aims to fill and is explored in greater detail in Chapter 4 of this thesis.

What follows is a more detailed account of the structure of an individual Studio School, as well as the network of Studio Schools. Given Studio Schools are different to conventional secondary schools, and yet seek to occupy space in the schools sector, it is important to have a detailed overview of what the schools look like, thereby building a contextual understanding to highlight the gaps that this thesis seeks to address.

2.1.1 Structure of a Studio School

Five years in the making, Studio Schools were developed in partnership with education charities, local and national employers, and with input from government (specifically New Labour from 2005-2010) (Studio Schools Trust, 2012a). Like conventional English secondary schools, Studio Schools (a state school) were set up to teach the national curriculum, however, with a 'strong emphasis on practical work, enterprise' (Studio Schools Trust, 2010), and the development of employability skills. The approach for this education model was envisioned as one that would 'much more closely integrate learning and work' (Young Foundation, 2006, p.3). The term 'Studio School' itself was derived from the concept of the Renaissance Studio, in which a 'Renaissance style of learning' was advocated (a student apprentice learning from the master) (Hendry and Sharpe, 2013, p.8). The learning was envisioned such that the schools would mirror workplaces as much as possible, including a recommendation that the school day run from 9am to 5pm, to address the perceived gaps between the 'skills and knowledge that young people require to succeed'(Studio Schools Trust, 2014) at work and that which was provided by secondary education.

As mentioned earlier, individual Studio Schools were to be set up as academies, which meant that the schools received funding from central government – an important

distinction from previously created City Technology Colleges or CTCs, which could be viewed as pre-cursors to the Studio Schools. [10] At the individual school level, all Studio Schools were intended to have a sponsor, who were meant to help the schools forge their own unique identities. Studio Schools, unlike UTCs, were subject to no prescription as to who could function as a sponsor for the school. [11] Where UTCs were required to have a University-based sponsor, for Studio Schools, the sponsors could be as diverse as the schools liked. This freedom and fluidity meant that sponsors have included universities, FE colleges, other schools, and employers.

Individual Studio Schools were to be set up to meet the needs of the local community (as alluded to by the notion of a community-centred model); however, there is no evidence of a clear relationship … between the 'presence of a 14-19 institution within a local area and key area-level variables' (Cook et al., 2016, p.27) (such as occupation sectors, local unemployment rate, qualification levels or even population ethnicity). As such, there is a need to understand why individual Studio Schools were set up where they were, how and why they chose their specialisms and the more detailed qualification choices they have made, what their ethos really is, and how this fit with the overall ethos of the envisioned model.

While some of the gaps in the existing literature on Studio School have demonstrated the non-prescriptive nature of the Studio School model (emphasised through the variation of implementation demonstrated by van Urk (2016) and Robson et al. (2018)

[10] On flexing some 'policy memory', the reader will recognise evidence of 'policy amnesia' (Higham and Yeomans, 2007, p.33) in the similarities in organisational structures between UTCs, Studio Schools, and City Technology Colleges or CTCs. The CTC model will be covered in further detail in section 2.4 when policy history is outlined.

[11] School sponsors are responsible for: the performance and finances of the school, setting up academy trusts, selecting the governing body, and recruiting the headteacher. Detailed information can be found at: https://www.gov.uk/guidance/sponsor-an-academy .

(Section 2.1.3), there were certain key 'ingredients' (Studio Schools Trust, 2010) that a school had to possess for it to be classed as a Studio School (as identified and defined by the Studio Schools Trust itself); all working together to deliver a unique curriculum to students. These ingredients are shown in Figure 2 on the next page.



Figure 2.2: The key ingredients of a Studio School as postulated by the Studio Schools Trust (2010)

2.1.2 Structure of the Studio Schools network

Studio Schools as a concept were conceived of as early as 2005, the brainchild of the Young Foundation [12] and the Edge Foundation [13] (Hendry and Sharpe, 2013). After their launch, the model was entirely supported by the Edge Foundation, alongside UTCs and Career Colleges, as part of their remit to promote a focus on technical study within secondary education. The network of Studio Schools was originally envisioned as forming a 'federation led by a chief executive' (Young Foundation, 2006, p. 41), an idea which set the scene for the formation of the Studio Schools Trust in 2008. This Studio Schools Trust provided leadership and support to individual schools, facilitating the development of common curriculum materials, creating professional development opportunities for staff, developing and nurturing networks of employers that the schools could tap into, and serving as a voice for advocacy of the schools at the regional and national levels of policymaking. The Trust was also designed to help individual Studio Schools tackle and overcome any challenges that they may have experienced in their local areas in the deployment of the innovative parts of the model by utilising the collective power of the network of schools to provide support and expertise as needed. In its heyday, the Trust comprised of nine members, from different organisations, representing education charities, employers, further education, and schools. It is worth noting that the Trust's relationship with the schools was fairly light-touch at the level of control over the model and its enactment quite loose (Young Foundation, 2006, pp.43-44). There has been no work done to understand why the architects of the model chose to adopt

[12] The Young Foundation is a centre for social innovation working in many fields – including health, education, housing and cities. The organisation came out of The Institute for Community Studies which was set up by the social researcher Michael Young in 1954. More information can be found at: https://www.youngfoundation.org/.

[13] The Edge Foundation is an independent charity dedicated to shaping the future of education in the UK. It has had a focus on enhancing and advocating for technical education across the UK. More information can be found at: https://www.edge.co.uk/.

a fluid, franchise-like structure; a gap that this thesis also seeks to address (the rationale for a fluid structure of governance is explored in-depth in Chapter 4).

The Studio Schools Trust ran the development of the network from 2010 (post-launch of the model), overseeing the rise and fall in numbers of Studio Schools over the last decade. However, due to a variety of financial and operational factors, in 2017, the Studio Schools Trust was dissolved and replaced by a looser grouping of Studio Schools, called the Studio Schools Network (Robson et al., 2018, p.8). This new organisation was set up by a small group of Studio School principals who were invested in keeping the model alive, and whilst they would meet regularly to provide one another with support, they were unable to maintain the same level of organisational and support work that existed within the Studio Schools Trust. [14] Given these members of the Studio Schools network were more preoccupied with firefighting issues at the school level, they were unable to deliver strong advocacy for themselves at the national policy level to the same extent that the Trust had been able to (ibid).

2.1.3 Studio Schools: What is known about the model so far?

As stated before, the literature on Studio Schools is limited. What does exist is largely journalistic in nature focused largely on the problems that have beleaguered the model such as high student truancy (Grant, 2016) and a lack of student recruitment leading to unforeseen school closures (Exley, 2016; Roberston, 2016). This lack of broad research stands in stark contrast to the vast rafts of work being commissioned to study other 14-19 institutions, such as the UTCs. That said, there are three key studies worth highlighting that

[14] It is key to note that, and as demonstrated in Robson et al. (2018), the relationship between individual Studio Schools and the Trust was one that disintegrated over the years. Where at the beginning of the school movement, the Trust had provided high levels of support and opportunities for professional development, this had dwindled significantly by 2017 with individual schools unaware of activities and resources available at other Studio Schools.

help understand the nuances of the Studio School model versus other schools from different perspectives, discussed below.

In so far as there has never been an in-depth evaluation of the overall effectiveness of the Studio School model, or any evaluation work conducted prior to the launch of the model on a national scale, van Urk (2016) attempted the first evaluation of Studio Schools (only) four years post-launch. He sought to build an explicit programme theory [15] to allow for an evaluation of the implementation of specific elements of the Studio School model. van Urk demonstrated that the Studio Schools movement had launched without a 'coherent theory of change' (ibid, p.19).[16] From an evaluation science perspective this was highly problematic because it meant that a substantial number of Studio Schools had launched and were functioning without a common set of principles to guide implementation and development. Van Urk's research zoomed in on two core tenets of the model (ibid, p.242): project-based learning and personal coaching. He determined that these core aspects of the model were not being implemented across the then 40 schools in the network in any uniform manner and subsequently developed a framework for measuring the effectiveness of implementation for both elements. This was done using approaches grounded in evaluation science. Where this study was limited, however, was in its exploration of the factors that contributed to this varied approach to implementation. As van Urk himself acknowledged, no qualitative data was collected to allow for a contextualised

[15] A programme theory is used to explain how an intervention (either a project, or a strategy) is truly responsible for a generating a certain set of results that produce an impact. Diagrams known as logic models are created and usually used to represent the theory as they show the logic of how an intervention is understood to work. (Rogers, 2015). Explicit programme theories allow 'for weaknesses in programmes' to be exposed and allow for more homogenous implementation of a particular programme (van Urk, 2016, p.230).

[16] Weiss (1995), a notable methodologist in evaluation science popularized the term 'Theory of Change' to explain the relationship between programme activities and outcomes that lead to a longer-term outcome for a programme or initiative. This is a term that is now used often in development and in entrepreneurships.

understanding of why implementation was varied, both at the level of the Studio Schools Trust or the schools themselves. What is also interesting is that even though this framework of evaluation was developed and given to the schools, it was never implemented in Studio Schools moving forward (Studio Schools Trust – personal communication, November 2016).

The second study of note was conducted over a two-year period; one which sought to assess the performance of UTCs and Studio Schools based on recruitment, the comprehensive nature of student intake, curricular offers, and performance and progress (released as two reports: Cook et al., 2016 ; Thorley, 2017). This study recommended that there should be a 'block on the creation of new Studio Schools after 2017/18' (Thorley, 2017, p.5) arguing that the schools, alongside UTCs were vulnerable to a 'cycle of decline' (ibid, p.3) due to several structural barriers such as increasing competition between schools, narrowing accountability measures, societal perceptions and lowered funding. Utilising a mixed methods approach, this study found that both UTCs and Studio Schools had been failing to recruit enough pupils, which was the main reason for the closure of both types of schools (ibid, p.18). The study's qualitative analysis highlighted that 'structural' (policies around pre-pupil funding), 'local' (a lack of communication in localities) and 'societal' (perceptions of vocational training) barriers were key contributing factors to this difficulty in recruitment (ibid, pp.21-25). It was also demonstrated in this study that both sets of 14-19 institutions were failing to recruit comprehensive cohorts of students, with Studio Schools disproportionately recruiting low attainers and pupils from disadvantaged backgrounds (Thorley, 2017, p.34). The 'shape of this recruitment', particularly in Year 10 was driven by the combination of 'push' (disengagement with traditional subjects and low prior attainment, for example) and 'pull' (links to employers and work opportunities, new buildings, for example) (ibid) The study identified that Studio Schools had also experienced

poor league table performance, and that the schools were 'failing to improve progress and attainment' in pupils (ibid, p.61); however, this was based entirely on an analysis of Progress 8 measures alone. The authors acknowledged that there was anecdotal evidence from parents and students at UTCs and Studio Schools that the schools '[could] help develop additional skills [such as independence and autonomy, ambition and drive, social skills and confidence]' (Thorley, 2017, p.47), however there was very little focus on these skills in this study. Whereas the study provided an evidence of some of the policies that have played a role in creating the cycle of decline for these institutions, it failed to provide an understanding of the policies that may have contributed to the generation of the model; one cannot fully appreciate the model's journey without an understanding of its origins. Also, as indicated in Section 2.1.1, there was no emphasis in this study on understanding the factors contributing to the choice of specialisms at individual Studio Schools, and how this may contribute to what role the school is playing in its locality, something that this study zooms in on.

The third and most recent study described the Studio Schools' model as having an identity that was in a state of flux. Robson et al (2018) examined the implementation of the CREATE employability framework across the network of Studio Schools and found (much like van Urk (2016) did in relation to project -based learning and personal coaching) that there was high variation in the deployment of the framework across individual schools. Utilising a mixed methods approach, the researchers located Studio Schools on a spectrum of engagement with the employability framework (from no engagement to high engagement) and explored in detail the factors contributing to this level of engagement by examining different perspectives from within the schools. The researchers found that of the 14 schools

that participated in the study,[17] only five engaged with the CREATE framework and developed employability skills in students in the manner that had been envisioned by the architects of the model (ibid, p.24). The 'messy realities' of utilising the employability skills framework across the network of schools led the researchers to recommend that the Studio Schools take a step back, and 'assess if the CREATE framework and the employability skills it inculcate[d] are still fit-for purpose' (ibid, p.2)

The CREATE framework was intended to sit at the heart of the Studio Schools model (ibid, p.15). Through examining the skills framework across five different schools (identified along of the spectrum of engagement with the CREATE framework), Robson et al. (2018) determined that there was also, and perhaps more importantly, high variation in the implementation of **all** the elements of the Studio School model due to a variety of structural and external challenges that the schools needed to navigate in their journey of opening and attempting to thrive (similar challenges to those outlined above by Thorley, 2017). To counter these challenges (increasing marketisation, narrowing accountability measures, lowered funding and increased central control), the study demonstrated that individual Studio Schools often returned to mainstream approaches to pedagogy and curriculum design, and struggled to maintain the unique identity of the Studio School model (Robson et al., 2018, p.83). These findings further highlight the need to understand what role Studio Schools are actually playing in the landscape of 14-19 education, and how it compares to what they were intended to deliver (and **how** and why this role may have changed), particularly with regard to those schools offering STEM specialisations.

[17] This research was conducted with the total number of Studio Schools open at the time (2018) (N= 33). The survey was open to senior leadership and to staff across the schools to understand the deployment of the CREATE framework from multiple perspectives. The total number of responses to the survey was 21 from the 14 schools.

2.2. STEM in Studio Schools

2.2.1 Definition of STEM and STEM skills

This section outlines the broad definition of STEM used in this study and then introduces the language of 'skills' as has been used in this thesis as well. STEM usually refers to Science, Technology, Engineering and Mathematics, however, what disciplines fall under the umbrella of STEM is a debate that is hotly contested at all levels of education and in relation to the workplace as well. Widely different interpretations and a lack of consistent definitions has led to 'starkly contrasting research findings' (National Audit Office, 2018, p.18) on the effectiveness of or even the need for STEM education interventions. In secondary education, for example, there is not only debate over which subjects fall under the classification of STEM (Bybee, 2010; Breiner et al., 2012; Peters-Burton, 2014; Nadelson & Seifert, 2017), but also a challenge as to whether schools could indeed be labelled as STEM schools without an integrated approach to teaching those subjects (for example, Johnson, 2013). In Higher Education, the debate focuses primarily on classification, which used to come from the Joint Academic Coding System (JACS), and now the Higher Education Classification of Subjects (HECoS),[18]. This new coding system, though broadened to reflect interdisciplinarity is still imperfect, as there are elements of STEM in traditionally non-STEM classifications such as economics. In a work context, there is even wider scope for differences in definitions of what classifies as a STEM job as disciplinary boundaries are even further blurred.

Harrison (2012), in the Further Education (FE) STEM data project, identified 15,000 STEM qualifications used throughout FE and skills system by analysing the learning

[18] Both of these frameworks are used by the Higher Education Statistics Agency (HESA) and The Universities and Colleges Admissions service (UCAS): https://www.hesa.ac.uk/innovation/hecos.

outcomes associated with these qualifications. STEM qualifications in FE were defined (ibid, p.3) to be those that contained learning outcomes that are deeply rooted in science, mathematics or engineering and/or are of a 'technical' or 'technology-application/use' nature, and could, as a stand-alone qualification, provide the foundation required to progress into further study or employment in an S, T, E or M related field. Whereas Harrison's study did not use medicine and health-related qualifications, under the umbrella definition of STEM for this study, this study did (in the case of the vocational or technical qualifications). Moreover, McComas and Burgin (2020, p.4) state that teaching 'any of the individual elements (S, T, E, or M) should be referred to as STEM education'. Consequently, following the definition in use above (Harrison, 2012) and McComas and Burgin, if any of the Studio Schools in this study were offering qualifications that fell outside of GCSE mathematics, or science (single, double, or triple awards),[19,20] and fell under one of those elements described above, they were labelled as a STEM Studio School. In addition, Studio Schools that self-described as a STEM school, were also labelled as STEM Schools.

Globally, the policy literature on STEM has been mostly linked to labour market needs and economically focused goals (this will be explored further in Section 2.4.1). In England, this literature (Bosworth et al., 2014; UKCES, 2015) has used the approach of holding qualifications as a proxy for 'skills'.[21] While an imperfect measure (Hooley, 2020), it is one that is quantifiable. Therefore, for the purposes of this thesis, when referring to STEM

[19] Science includes Biology, Chemistry, Physics and Computer Science. These subjects fall into what are known as English Baccalaureate (EBacc) subjects. The EBacc is discussed in detail in Section 2.4.4. Only GCSE qualifications are considered for this classification as Studio Schools were attempting to be disruptive as STEM schools with a blend of academic and qualifications in the lower secondary schools' sector (not usually the case).

[20] It is to be noted that one of the Studio Schools in this study, Studio School Curie, offers all GCSE and A-level courses, but this offer goes beyond science and mathematics to offer courses like Astronomy.

[21] In adopting a language of skills, this thesis is adopting language similar to that in the policy sphere, which is driven by the economic goals of a STEM-focused education agenda. Please see section 2.2.3 for a more detailed understanding of the varying goals of STEM education.

skills, the emphasis will be on STEM-focused qualifications and possession of the qualification (or working towards it) is designated as a STEM skill.

2.2.2 STEM in Studio Schools

When looking at the spread of specialisms across the network, it is evident that there was a high proportion of Studio Schools that adopted a STEM specialism as a headline focus. Of the 24 Studio Schools open at the time of writing,[22] over 75% of the have a STEM-based specialism either as its only specialism or one of its specialisms offered to Key Stage 4 and 5 students (See Appendix D for a list of STEM Studio Schools). These specialisms range from the generic headline area of Engineering to the more specific such as Space. In the aforementioned study (Section 2.1.3), researchers (Thorley, 2017, p.36) noted that the curricular focus (i.e., qualifications offer) in Studio Schools tended to be either a predominantly a 'vocational' or 'blended' offer, i.e., they were schools that offered GCSEs in mostly non-STEM vocational subjects alongside a large number of non-GCSE vocational options. This classification did not account for the non-GCSE vocational options that fall under the umbrella definition of STEM subjects. This thesis considers the above discussed (Section 2.2.1) definition of STEM (irrespective of whether it led to GCSE or vocational qualifications) to identify Studio Schools as being STEM-focused or not. Thorley 's research (2017) (as highlighted before) also lacked in generating an understanding of the various factors that may have contributed to the choice of qualifications in the individual schools. This thesis seeks to fill that gap by seeking to understand how Studio Schools chose the STEM qualifications that they did, and if and how the choice of a STEM qualification has shaped the role of the schools from the perspective of different key stakeholders. Given the

[22] This trend has held over the past few years, despite the decline in the number of Studio Schools. For example, in the 2016-2017 academic year, when the data for this thesis was collected, there were 36 Studio Schools open. Of these 36 schools, over 75% of the Studio Schools offered a headline focus of STEM.

existing evidence (Cook et al., 2016) that Studio Schools were not necessarily being set up in areas where the qualifications offered were tailored to suit local labour market need, it is paramount to understand why so many Studio Schools were choosing to align themselves to a STEM specialism (explored in-depth in Chapters 5 and 6 of this thesis), and how this might be shaping their role at both the local and national level (Chapter 7).

2.2.3 STEM in education

This section is by no means an intensive account of all STEM and science education discourse and debate; however, it provides an overview of some of the key discussions that may have had an impact on individual Studio Schools' decisions to not only offer STEM qualifications, but also the approaches they may have taken to delivering these in their schools. These debates range from the 'epistemic underpinnings of the nature of STEM' (Erduran, 2020, p.781) to the philosophical purposes of STEM and STEM education in schools (Reiss & White, 2014, p.82; Wong et al., 2016) to the more practical discussions on how STEM should be delivered in the curriculum (Lamb et al., 2015; Han et al., 2015 for example). There also has been extensive work done to understand the effects of STEM education on learning and achievement (Ruiz-Primo et al.,2000; Micari et al., 2016, for example) to the impact on students' engagement with learning, career choices, and even development of identity (Archer et al., 2010; Burgin et al.,2015; Archer et al., 2015 ; DeWitt et al., 2016; Kitchen et al., 2018);

It is argued that the origins and perception of STEM in England are vague and can quite often be confused (Wong et al., 2016, p. 2350), much like in other countries (Park et al., 2020). As demonstrated in Section 2.2.1 above, the STEM banner comprises of a loose amalgamation of subjects, which can be subject to interpretation, and for many outside the 'STEM community' it has limited or no meaning (Wong et al., 2016, p.2347). As evidenced by

many researchers (Reiss et al., 1999; Reiss & White, 2014; Tomei et al., 2015; Wong et al., 2016; NSTA, 2020) and the policy literature (discussed further in Section 2.4.1), one of the most dominant discourses in STEM education (globally, but emphasis here is on the United Kingdom) is that relating to the development of STEM skills and the promotion of STEM education and activities as a means of growing the economy through innovation. This belief has been prevalent for a very long time (Wong et al., 2016; National Audit Office, 2018). The discourse that has surrounded these goals has focused on a shortage of STEM skills in the population; skills that are believed to be needed for the success of the economy. However, this approach to economic growth is a hotly contested debate. Researchers question whether this human capital theory approach to accumulating larger stocks of high level STEM skills will actually translate into a better economy (Dixon, 2015; Camilli & Hira, 2019). This further joins up with a long-standing debate that centres on whether there is in fact a STEM skills shortage at all in England and abroad (Begley et al., 2015; Camilli & Hira,2019). The argument made, broadly speaking, is that the supply and demand for scientists and engineers is in fact fairly evenly balanced (Bosworth et al., 2013); where there are shortages, they are in very specific sectors and occupations (National Audit Office, 2018, p.8). When thinking about high-level skills in particular, for example, the supply and demand projections for 2020 '[did]not suggest an overall shortage of STEM graduates in most regions or nations of the UK' (Bosworth et al., 2013, p.8). And yet, there has been a consistent push (from a government policy perspective) for more entrants into higher level STEM qualifications and consequently the STEM workforce.

> …we need to tackle particular shortages of STEM skills. These skills are important for a range of industries from manufacturing to the arts (Department for Business, Energy & Industrial Strategy, 2017, p.97).

> STEM skills are crucial for the UK's productivity, and a shortage of STEM skills in the workforce is one of our key economic problems. (Committee of Public Accounts House of Commons, 2018, p.3)

The debate on skills demand aside, government research (Parliamentary Office of Science & Technology, 2013, p.1) has also highlighted that there needs to be a better balance between 'academically trained scientists and engineers, and highly-trained, but vocationally .oriented individuals'.

The tone of discourse from government policy has left people in education with varying perceptions of the purpose and focus of initiatives under the STEM banner, and this has been explored in detail by many researchers (Wong et al., 2016; National Audit Office, 2018, for example). Wong et al. (2016) for example, identified that there are many in STEM education who felt that there was an under representation of subjects other than science (Wynarczyk & Hale, 2009; Hoyle, 2016, for example) whenever there was a discussion of STEM policy, or when there was a heightened focus on STEM in a secondary school. Also highlighted (Wong et al., 2016) as important to acknowledge is that there was also a sense of confusion as to what the T in STEM actually represents at school level (Honey et al., 2014), and that there was a lack of focus on technology in schools, in part driven by the narrowing emphasis on certain subjects as the 'gold standard' as laid out by changing accountability measures (Tomei et al., 2016; Hoyle, 2016, p.2).[23] It was even identified by the Royal Society (2011) that work needed to be done to not only increase the number and range of subject specialisms related to STEM, but also that 'employers, the STEM community and educational institutions'(ibid, p.xii) needed to come together 'to address

[23] The introduction of accountability measures such as the EBacc has been a source of consternation for many schools (new models and conventional) as it has limited what they can provide for students in order to be perceived as 'good schools' by parents and government alike (Greevey et al. 2012 /x). This has led to a reduction in the number of students taking subject as Design &Technology, for example.

weaknesses in the UK's educational systems' (ibid, p.48) (referencing the numerical lack of and quality of specialised teachers, and a restricted curricula, to name but a few problems).

Research has also shown that there is a disconnect between how STEM was viewed in schools and how it was perceived at the policy level (Department for Education, 2011; Wong et al., 2016). More recently, Wong et al. (2016), through semi-structured interviews conducted with 21 key contributors to the science and/or mathematics education discourse in England showed that for many in education, the 'social justice argument [was] more important than the economic argument' (p.2362) pursued by government. The study argued that despite this called-for emphasis on STEM, there had been no real improvement in the number of women or ethnic minorities represented in STEM jobs (ibid, p.2362); that the policies that have been pushed have 'primarily focused on high achievers' (ibid, p.2362); and that there still continue to be significant levels of disengagement amongst students taking mathematics and science courses at age 11-16 (also demonstrated by, for example, Boe et al., 2001; Brown et al., 2008).

The government's high emphasis on an economically focused aim for STEM education, while important, has been critiqued and challenged with the view that there are many aims for science (and in turn STEM) education (Reiss et al., 1999; Calabrese Barton, 2001; Reiss, 2007). These include but are not limited to the need to enhance scientific literacy for all students (Reiss, 2018), the teaching and learning of science to include 'critical activism and citizenship' (Calabrese Barton & Upadhyay, 2010, p.5), and even using science education as a means to equip learners to lead a personally fulfilling lives (Reiss & White, 2014). It is also widely agreed that work needs to be done to increase the diversity of STEM professionals (Wong et al., 2016, p.2361), and to ensure that there is increased STEM literacy across the population (Rammell et al., 2006; Sainsbury, 2007; Department for

Business, Innovation & Skills, 2011; Archer et al., 2013). The diversity of the aims of science and STEM education make it important to understand to what purpose the Studio Schools in this study were putting their efforts through their offer of STEM specialisms.

This thesis therefore seeks to explore the following questions: where do Studio Schools fall in their enactment of a STEM agenda? Are they approaching the development of STEM skills purely from an economic perspective of contributing to the future workforce, or are they pursuing a STEM policy that is in line with a more broad purpose, compatible with the ideals of a 'science education for all' , or both , or is there a totally different reason that Studio Schools have chosen to adopt a STEM specialism?

2.3 Learning from school models similar to Studio Schools

This review would be incomplete without looking to similar models in the ever - diversifying landscape of 14-19 institutions. UTCs are similar to Studio Schools in their innovative 14-19 curriculum, and yet stand in contrast to them in two ways: a defined STEM focus and higher public profile. The research on Studio Schools is minimal at best when compared to the focus that has been placed on understanding UTCs (for example: Tomlinson, 2014; Acquah et al., 2017; Kettlewell et al., 2017; Dominguez-Reig & Robinson, 2018; McCrone et al., 2019; National Audit Office, 2019; Bathmaker, 2019). While UTCs have also suffered a loss in the numbers of schools that are open, there are still currently 48 UTCs operating across England,[24] compared to 24 Studio Schools. Researchers (for example,Thorley, 2017) have recommended that UTCs should become 'high-quality providers of technical education for students aged 16-19' (p.60) only, and all new UTCs should open under this remit alone, with existing UTCs that are not rated 'Good' or 'Outstanding' (OFSTED) converting into academies

[24] Numbers obtained from the gov.uk website in July 2020.

. Where elements of this research regarding UTCs has been discussed in sections above, this particular recommendation was made by the researchers to prevent these 14-19 institutions from falling into the same 'cycle of decline' that Studio Schools have experienced, and that the UTCs themselves were vulnerable to. UTCs, unlike Studio Schools are still supported by government with applications for new UTCs still being accepted (Department for Education, 2020).

A more recent evaluation of UTCs (Kettlewell et al., 2017; McCrone et al., 2019) highlighted the challenges that the UTC model faces in the implementation of two of the core tenets of the education model. This two-year case study (across 10 UTCs in the network) focused on understanding the effectiveness of the implementation of project-based learning and sought to understand how employer engagement was being approached within the UTC model. This evaluation also focused on the perceived impact of the UTC model on pupils, as well as on understanding subsequent destination choices for the students who chose to attend UTCs.

Project-based learning and employer partnerships are essential to delivering the UTC model effectively (much like in Studio Schools), and the researchers (McCrone et al., p.4) found that the implementation of project-based learning across the network of UTCs was varied in nature and quality (much like the Studio Schools in van Urk's (2016) study); where some UTCs displayed best practice in providing 'industry-relevant' projects in collaboration with employers (ibid , p. 21), other UTCs struggled to even make links with employers to facilitate this. McCrone and colleagues (ibid, p.9) also found that employers 'contribute at different levels' to the development of projects and development of employability skills across the case study sites. It was clear that UTCs faced challenges both in maintaining the level of employer engagement needed to deliver the key elements of the model, in the

delivery of projects in the curriculum, difficulty in engaging with a suitable range of employers, not being able to recruit enough students who were interested in the UTC offer, and the recruitment and retainment of high-quality staff to name a few. The research (ibid, p.23) also shed light on the fact that external and policy driven mechanisms such as a narrowing accountability framework, changing curriculum demands, and dwindling funds from local and national government were factors that also contributed to the difficulty in maintaining the key aspects of the UTC model.

Whilst most academic research has focused on understanding student career trajectories and the impact of changes to careers advice in University Technical Colleges (Acquah et al., 2017, for example), there is one study of note that offers some insight into the broader role that UTCs might be playing in English education. Bathmaker (2019) found that UTCs, despite their aim of delivering key STEM skills for the economy, actually served as a second chance at education for many of its students. The study (conducted at two UTCs) found through its quantitative analysis that neither of the schools in the study had a cohort of students who were there solely because of their interest in STEM subjects or even careers- it was much more than that. Through constructed student narratives, it was demonstrated that the UTCs were a place where students chose to come to get a fresh start; most did not even want to pursue a career in STEM (ibid, p.15). These were students who struggled to be taken seriously academically in their previous schools and had moved in reaction to their previous attainment (ibid, p.9). This finding not only re-asserts the narrative that exists in English education that schools with a vocational focus are for those that struggle academically (ibid, p.15) but also highlights the tension between the marketed aims of the UTC model, and what was happening in practice when the UTCs were set up. Through its use of Ball et al.'s (2012) policy enactment framework, Bathmaker's research

demonstrated how the UTCs in the study were not only shaped by the policies that had come together to form the UTC model, but also by external factors such as the 'overwhelming presence of the A-C regime' (ibid, p.15) and highlighted that attention needs to be paid when policy is enacted in practice; an intention that will prove important in this project when investigating how the Studio school vision is being brought to life. Furthermore, her analytical approach to using Ball et al.'s (2012) enactment framework, which viewed the UTC model as a policy ensemble has served as inspiration and has been adopted in this study (see Section 3.2 for further detail).

2.4 Situating Studio Schools in the English education policy landscape: a brief history

The conceptualisation of Studio Schools did not occur in isolation; the state of the policy landscape contributed to the development of the Studio School model. This section is by no means a comprehensive history of the evolving English education landscape; however, it covers key policy changes that may have shaped and contributed to the Studio School model and to the broader state of STEM and secondary education in England. The last four decades of policymaking have been marked by increasing 'specialisation, selection and privatisation' (Walford, 2014a, p.315), with an increasing trend towards market reforms (Le Grand & Bartlett, 1993) and Studio Schools have had to navigate this ever-changing landscape since their inception. There are those who view the establishment of new institutions such as Studio Schools as dramatic changes (Cook et al., 2016), yet a reading of the history of English policymaking would indicate that there have been various initiatives that have come before that were similar. Understanding history is important when looking at the enactment of policy, as it allows for an appreciation of 'policy sedimentation'[25]

[25] Policy sedimentation is the idea that contemporary layers of policy build upon old ones (Gerwitz et al., 2019).

(Gerwitz et al., 2019, p.2) which gives us an indication of the (un)intended consequences of policies being adopted or abandoned. What counts as policy, however, can be difficult to define (Hill, 2013; Ball, 2013) and is often unclear and can mean different things to different stakeholders. Ball, for example, has suggested that policy be treated as more than just text and a product but as a 'process, something on-going, interactional and unstable' (2013, p.8). Therefore, by presenting the policy discourse through a selection of government acts, reports, parliamentary debates and associated relevant research contributing to the policy decisions occurring over the history of education, a better understanding is gained of the landscape into which Studio Schools were borne.; understanding the role of the Studio Schools in the present context would be impossible without engaging with history. Therefore, keeping in line with the policy scholarship research tradition (Grace, 1995) within which the policy enactment approach sits, this section provides a historical overview of the key policies, ideologies and structures that have influenced the emergence and delivery of the Studio School model. It is of note that where one of the key features of Studio Schools is that they be small schools, the focus of this thesis has not provided the space for an exploration of the literature and policy ebbs and flows of small schools in England. That said it is acknowledged that further work might warrant an exploration of the impact of being small on the workings of the Studio School.

2.4.1 STEM in government policy

There are multiple tensions that exist for educators in the delivery of STEM education (Section 2.2.3). As researchers have also intimated, these tensions can be traced to the government's emphasis in its policymaking related to STEM, and the interpretations of these policies at the school level (Morgan et al., 2016, p.11; Wong et al., 2016). The section

below aims to summarise some of the key historical moves that have contributed to these tensions.

As early as the second half of the 19th century, there was a heightened interest in science education (and technical training) driven by the belief that when compared to France, Germany and the USA, Britain had fallen behind in industrial supremacy. In 1853, the *Science and Art Department* was established following the Great Exhibition of 1851; this department was formed to promote arts, science, technology and design until it was absorbed into the Education Department in 1856. The establishment of this department resulted in a number of commissions, Acts of Parliament, and institutions that were formed, aimed at improving science and technical education and increasing the skills perceived to be needed; all driven by the belief that Britain was falling behind Germany and the USA in industrial change and dominance (Gillard, 2018). The call for more scientists was echoed in 1946 through the *Barlow Report: Scientific Manpower*. The Barlow Report, in particular, recommended that there should be a national integrated system of schools, technical and technology colleges, universities and industry, all coming together to tackle this perceived shortage of science and technical skills.

The 1961 White Paper *Better opportunities in Technical Education* reiterated the need for an education system that would produce a greater output of qualified scientists and technologists to allow for a more technologically advanced society. The *Dainton Report* of 1968 (also known as *Swing Away from Science* or *Enquiry into the Flow of Candidates in Science and Technology into Higher Education*) found that the numbers of people entering science and engineering at university was low. Once again, there was an emphasis on increasing the supply of science and technology skills, however, this report also advocated improving the perception and position of science, technology, and engineering in education,

and in society (Editorial Board, 1968). The report placed the blame for this shortage of skills squarely on the way science was taught and approached in secondary schools – resulting in disengagement. Its recommendations included that all sixth-form studies should include some element of science and mathematics.

This idea that there was a need for a greater supply of scientists and engineers as a means to enhancing innovation and improving productivity was returned to in a review in 2002 in a report titled *Get SET for success – the supply of people with science, technology, engineering and mathematics skills*; this is also known as the Roberts Review. The report highlighted (p.2) that there was a skills mismatch between what was required by employers in STEM and what STEM graduates possessed, a disconnect between employer demand for graduates and the declining numbers of mathematics, science and engineering graduates. The report identified that the way science and engineering education was approached at schools was one of the issues behind these disconnects (particularly in relation to careers education, and poor experiences of the practical aspects of science and technology education). The report called for the improvement of science and mathematics instruction in schools, and emphasised that employers (alongside schools and universities) also had to find ways to increase the attractiveness of jobs in science and engineering to help strengthen the supply of young people into those jobs (ibid, p.15). Wong et al. (2016) argued that this report set the scene for the formal STEM agenda in England as the Roberts' report was followed by four further reports related to science education, and a formal programme dedicated to addressing the various issues pertaining to related skills shortages. These authors (Wong et al., 2016) highlighted that the Roberts report (2002) with its emphasis on **only** science, engineering and technology (with no emphasis on mathematics) also set the tone for a preoccupation on improving certain subjects over others. SET was

only changed to STEM (to include mathematics education overtly) following lobbying from the mathematics education community (Wong et al., p.2353). This initial neglect set the tone for subsequent reports and policies, which has led to a 'feeling of being invisible, of needing to fight to be seen and acknowledged as part of [an important] agenda' for subjects other than science (ibid, p.2354).

Subsequently, the government launched a 10-year investment framework which set out a long-term vision for science and innovation across the UK; [26] it was through this framework that the discourse surrounding STEM education was further solidified. This framework was developed in the context of needing an integrated education system (similar to that proposed by Barlow (1964)- school, further and higher education working together) that would allow for the development of appropriate science and engineering skills for the labour market. The framework also called for a focus on public engagement, and increasing scientific literacy, however, what this literacy should look like was left ambiguous. The need for higher public engagement, however, was once again framed with an economic view, within the context of the 'importance of public debate in developing areas deemed critical to future economic success' (HM Treasury et al., 2006, p.6). Once again though, there was an increased emphasis in policy on the improvement of science educators, the number of students obtaining science GCSE results only, with a view to increasing the number of students choosing science, engineering and technology subjects in post-16 and higher education (ibid, p. 8); continuing the afore-mentioned neglect of all the other subjects that would be encompassed within a slightly broader conceptualisation of STEM. This report (HM Treasury et al., 2006) while calling for an increase in diversity both in terms of the number of

[26] This framework had six broad themes: World class research; Responsiveness to the needs of the economy; Business R&D and innovation; Supply of scientists Public understanding and engagement; Science and Innovation across Government.

girls and ethnic minorities, offered no concrete recommendations on how to do so. In addition, this report set in motion an increased emphasis on A-levels as **the** (added emphasis) way to provide 'well qualified people for industry' (ibid, p.8), moving the STEM education agenda towards a more academic focus.

During this period of interest and investment in science instruction, and following the Roberts Review, the government set up a formal *STEM Programme*. This was followed by the setting up of the STEM Cohesion programme, which aimed to ensure that all programmes and initiatives focused on STEM (that were publicly funded) were coordinated. Eleven groupings of activities known as 'Action Programmes'[27] were identified to help schools pursue a more coherent approach to STEM education. This programme ended in 2011, however the ideas that it explored and advocated continue to be debated today in areas such as the science curriculum, professional development for science teachers, and public engagement in science to name a few (Wong et al., 2016).

Since the closure of the above programmes, government's formal steer on STEM education related policy has ended although there has been continued emphasis on the need for STEM skills to build an innovative and high–performing economy (National Audit Office, 2018). Between 2010 to 2015, the Coalition government continued its emphasis on wanting to inspire students to study STEM subjects through multiple initiatives, framed yet

[27] The eleven Action Programmes included: Improving the recruitment of teachers and lecturers in shortage subjects; Improving teaching through CPD for mathematics teachers; Improving Teaching and learning through CPD for science teachers; Improving teaching and learning by engaging teachers with engineering and technology; Enhancing and enriching the science curriculum; Enhancing the teaching of engineering and technology across the curriculum; Enhancing and enriching the teaching of mathematics; Improving the quality of advice and guidance for students (and their teachers and parents) about STEM careers, to inform subject choice; Improving the quality of practical work in science. It should be noted here that where there was some emphasis on improving the position of engineering and technology through these Action programmes, they overwhelming emphasis from a policy perspective in terms of skills needs for the economy has continued to be on science and mathematics (Department for Education, 2011).

again in terms of the needs of the economy.[28] STEM skills, however, were once again represented only by mathematics and science skills, and improving them was meant to be accomplished by improving careers advice, and increasing access to employers. It is to be noted that this period was also marked by the opening of Studio Schools and University Technical Colleges, both of which, particularly UTCs were meant to be focused on the development of STEM skills for labour market needs (their development has been discussed in earlier sections of this chapter).

More recently, the responsibility for the development of STEM skills has involved several government departments (such as Department for Education and Department for Business, Energy & Industrial Strategy) and has been embedded across a number of non-STEM specific policy areas (ibid, p. 5). There continues to be an emphasis on the development of STEM skills as a response to the need to be growing the economy and productivity (The Committee of Public Accounts House of Commons, 2018) as evidenced by the 2017 White Paper, *Industrial Strategy: Building a Britain for the future*. That said there has been criticism (The Committee of Public Accounts House of Commons, 2018) at policy-level itself that government lacked 'sufficient understanding' (ibid, p.5) of what these specific skills shortages even were, and that there was still a lack of employer representation on key government STEM boards, an absence of adequate training and development for teachers in STEM subjects and an inadequate emphasis on good careers advice to help facilitate the move of students into STEM subjects and eventually STEM careers (ibid). This report (ibid, p. 7) was also highly critical of government's funding model for schools (this will be discussed in further detail in Section 2.4.2), which made it difficult for new models of

[28] One example of this is 'Your Life', which was a 'three-year campaign [aimed at] helping young adults in the UK get the maths and science skills needed to succeed in [then] current competitive global economy' (Department for Business, Innovation & Skills, 2015).

schooling such as UTC's (which were focused on increasing STEM skills) to establish themselves properly. It went further to highlight that where the government may wish to pursue their aims of raising the public's engagement with STEM and overall STEM literacy, there has never been a concrete way forward that has been outlined to do so.

Where this section has focused on the shifts of emphasis for the need of science and STEM education in England, and how this emphasis has been framed within the confines of academic subjects only, the following sections will focus on the development of state education itself. These sections will explore the ideas of control, choice, specialisation and diversification, all of which are factors that have contributed to the making of a 'quasi-market' in education (Le Grand & Bartlett,1993; Institute for Government, 2012). The history of the development of quasi-markets in English education is slow and spans four decades; from the birth of quasi-markets in the 1980s, to a brief movement towards a more cooperative approach in the late 1990s and early 2000s, and then a swing back to competition (late 2000s) (Institute for Government, 2012, p.3).The implications of various policies over these decades (and how they may have impacted the development of Studio Schools), organised in key themes are discussed in this section. Acts, White Papers, Reports and debates cut across the themes, as the same policies and reports had different emphases embedded in them.

2.4.2 Central vs local control

This section does not aim to provide a comprehensive overview of all the policies on school management and funding mechanisms that have dominated the landscape of English policy. Instead, it provides a flavour of the swings in control between local and central government over the provision of secondary schooling. Particularly pertinent to the development of the Studio School models are the policies that drove the move away from a locally driven

collaborative model to one that is more subject to central control and increased competition. England is unique among larger (population-wise) developed countries regarding the degree to which control of state-funded education provision is centralised (Keep, 2020). Unlike in other countries, where is there some form of partnership between central and local, regional or provincial institutions, and in some instances social partnership bodies, in England there exists 'central government, its market regulators and individual providers' (ibid).

Since the beginning of government responsibility for education, there has been a tension between the need for central versus localized control in England. As early as 1861, the *Newcastle Report* recommended that there should be local School Boards, which allowed for more equal distribution of education provision. At the time, there were several thousand elementary schools in receipt of government grants, and so having local boards made it easier for the government's Education Department to correspond with and oversee provision. The 1870 *Forster Act* [29] officially established Schools Boards to supervise the implementation of elementary education, with powers to raise local rates to fund provision. In 1888, *The Board of Education Act* created a Department of State with central oversight over the education system. In 1902, the *Balfour Education Act* replaced the 2,650 School boards (which were, at the time, directly elected and under popular control) with 350 Local Education Authorities (LEAs) which had control over elementary schools, and the right to establish, maintain and fund secondary schools (Gillard, 2018). The foundations for the current English secondary system, however, can be found in the Education Act (*Butler Act)* of 1944 which replaced almost all previous legislation (ibid). The Act which raised the legal

[29] This Act provided the framework for a national system of elementary education, by providing a universal system of elementary schools for all children up to the age of 10, on the grounds that basic education, which was needed in the workforce, was lacking. It was not, however, made universally compulsory until 1880.

school leaving age to fifteen described education as a continuous process, and that students (until they left school) would pass through two stages: primary (until age 11) and secondary (ages 11 to 15). This Act aimed to provide a free education for all (Gillard, 2018). The Act also, in effect, gave LEAs the ability to do what was right for their area, with the Minister in central government to oversee execution of local needs. This power that LEA's enjoyed for decades was effectively diminished by multiple Conservative administrations starting in the 1980s through major centrally mediated changes to the curriculum (establishment of a National Curriculum as discussed in Section 2.4.4) and the centralisation of administrative power. The power of the LEA's was eroded through the 1988 *Education Reform Act* which gave schools the option to opt-out of LEA control and be maintained directly by central government (Gillard, 2018). Under the 1988 Act, schools could apply for grant-maintained (GM) status, which meant that schools could opt out of LEA control essentially becoming self-governing. This meant that they could be directly funded from central government, have control over staff and admissions, and have access to additional capital funding, unlike those that were under the control of LEAs (Harris, 2012, p.519). GM schools were not any different to local authority schools in terms of curriculum or structure (Walford, 2014a, p.317), just from a funding and management perspective. This Act, more importantly perhaps, allowed for the creation of City Technology Colleges (CTCs) which were designed to not only be a new way of sponsoring and funding schools, but also had a different curricular emphasis and structure. The creation of these schools introduced private influence into education (Walford, 2000, p.146), with the idea that the schools be at least partially funded and managed by industry partners. CTCs were viewed as 'an attack' (Walford & Miller, 1991, p.vii) on local education authorities with a deliberate move of authority away from them to

the central state and private industry by its funding mechanisms. (CTCs will be discussed in more detail in section 2.4.3).

The 1993 *Education Act* proffered the next appreciable change that could be observed in terms of control. The Act further increased the number of GM schools as it allowed for groups of parents, and charitable, religious or independent sponsors to apply directly to central government to establish their own schools. It is argued (Walford, 2004a, p. 320) that this Act and its associated developments were arguably the pre-cursor to the now prevalent Academies and Free Schools movement, which will be discussed further in this section and in section 2.4.3.

Grant-Maintained status ended in 1999 (ibid), following the publication of the White Paper *Excellence in Schools* (1997) and the *School Standards and Framework Act* of 1998. The GM schools once again came under the control of local authorities. Under the New Labour government that was in power at the time, local authorities were viewed as 'partners or partnership broker(s) – working with other authorities or public- private and voluntary sector bodies' to provide education provision (Harris, 2012, p. 521) through the creation of initiatives such as Education Action Zones (EAZs).[30] As highlighted by Harris (ibid), local authorities were also given new monitoring roles to maintain the new standards introduced by government (further discussed in Section 2.4.4). In so far as the local authorities gained back some of their lost control to aid in tackling underachievement and social exclusion, the 'value of schools' autonomy was reinforced [paradoxically by the same

[30] Education Action Zones (EAZ) were partnerships of around 20 schools; typically, three secondary and associated primary schools. EAZs were a mechanism by which an attempt was made to create a collaborative system of education involving public, private and community provision. This was a move away from central control and a market structure back to one that was more locally driven. The EAZs, however, were found to be 'conceptually faulty' and complex to implement, and therefore only lasted a short period of time (Reid & Brain, 2003, p.211).

government] as a key to innovation and development' (Harris, 2012, p.521) in the government's amplified emphasis on increasing diversity of schools. This will be further discussed in Section 2.4.3.

Local authority control experienced a shift in power once again (Harris, 2012, p. 518) through the *Education Act* 2002. This act gave central government the power to set a minimum school budget for individual schools if it felt that the LEA had set an inadequate amount. However, this was also the time the 'City Academy' model was introduced into state education; from the perspective of funding and management these schools were once again a signal of private influence in education (Taylor et al., 2006, p.53). Academies were envisioned to have sponsors (individual, businesses, faith, or voluntary groups) who, like with the CTC model were expected to partly fund the school (in this case, 20%) of the capital costs to run the school (ibid). However, academies, unlike CTCs were supposed to work in partnership with local authorities in their establishment and development, setting up an irreconcilable tension (Harris, 2012). It is of note that any and all partnership models were challenged by the *2006 Education and Inspections Act*, which recommended all comprehensive schools should become trust schools (not full Academies), putting more power in the hands of individual schools and taking it away from the LEAs. Schools were now able to recruit and employ their own staff, set their own admissions arrangements, and even own their own assets (Gillard, 2018).

Local authorities experienced further reduction in control and oversight of educational provision under the Conservative-Liberal Democrat Coalition government which came into power in 2010. The *Academies Act* of 2010 not only completely removed local authorities' power to veto a school becoming an academy but also allowed all schools (including primary and free schools) to convert into academies and for those schools that

were rated as 'Outstanding' to 'fast-track' into academies (Gillard, 2018). Local authorities lost the opportunity to provide consultation on the appropriateness of an offer of an academy for the local community. Conversion to academy status also meant that local authorities had to transfer property and any budget surpluses associated with the school to the academy, further incentivizing the academisation process (Harris, 2012, p.532). It is important to note that subsequent to the passing of the Academies Bill academies started to form formal groups called Multi-Academy Trusts (MATs) which are distinct legal entities that have considerable financial autonomy and sit outside the purview of local authorities (Greany & Higham, 2018). In its White Paper *The Importance of Teaching* (2010), the Coalition government made clear that school to school linkages via MATs was meant to be the mechanism for school improvement (Hargreaves, 2014), shifting the responsibility for school improvement even further away from the LAs (Simon et al., 2019), closer towards central government. In 2014, government also introduced prescriptive legislation around funding for schools (West, 2015, p.26), which once again shifted power away from the local authorities and into the hands of central government. As the authors highlighted (ibid), local authorities were required to allocate a 'single per pupil amount' based on specified 'pupil-led factors'; this meant that if a student left a particular school, then the funding would follow the student. This funding mechanism, it has been argued, encouraged further competition between schools who scramble for a finite number of students in the population and their associated funding (ibid; Robson et al., 2018).

As the above demonstrates, the historical and ever-increasing push and pull of power between central and local government for the provision of education in England (in terms of management and funding) exacerbated by the Coalition government have significantly reduced the role of local authority in secondary education. As the control over

education is so inexorably linked with the diversity of provision of schools in England, the next section will focus on diversity and comprehensiveness in secondary education.

2.4.3 Diversity and choice

This section focuses on the idea of different types of institutions (i.e., the organisation of secondary education), something that only occurred post-1944. The 1944 *Education Act* created a system which was characterized as 'plurality in provision' (Taylor et al., 2006, p.47). This Act established three main types of state-funded secondary schools: 'Grammar Schools', Technical Schools', and 'Modern Schools' (this last category laid the foundations of modern comprehensive secondary provision). The Act established that students would be selected into this *Tripartite System* based on results from an 11-plus examination in English and Mathematics. While parents could potentially choose between types of schools for their children there were 'no guarantees that their choice would be realised' (Allen, 2015, p.18). Parental choice was also largely meaningless when it came to the allocation of places in grammar schools. Parents could, in theory, choose to send a child who had been allocated a grammar school place to a secondary school, but not the other way round. The justification for students attending non-local schools lay very much with parents and was made difficult (Walford, 1994b), rather than aided and supported by the state. So, where parents had choice, it was a choice that was restricted between state and private education, between LEA and church schools, between single-sex and co-education schools, and in some areas between selective and non-selective schools (Walford, 1994a, p.316).

Reforms in the 1960s heralded the next phase of changes to the diversity of school provision. There was a push for comprehensiveness to level the playing field for all students (Benn & Chitty, 1996; Sandbrook, 2006; Chitty, 2009). Circular 10/65 issued by Harold Wilson's Labour government declared government's intention to end selection at 11-plus.

Many, though not all, LAs then proceeded to reorganise their secondary schools along comprehensive lines (Gillard, 2018). Despite this move towards comprehensivisation, there were still high levels of diversity of secondary school provision. Grammar Schools remained in some areas, and many ex-grammar schools retained their old ethos to maintain reputation in local communities (Taylor et al., 2006, p.48). In 1978, the Labour government passed a bill that required LEAs to start using a procedure for admissions that was based on parental preference, but this was never enacted in law (Allen, 2015). In the meantime, there was ever-increasing disagreement in opinion on the benefits of comprehensivisation, brought to the fore by a series of Black Papers published between 1976 and 1977 (Cox & Boyson, 1975, 1977; Cox & Dyson, 1969a, 1969b, 1970).

The *1980 Education Act* made allowance for parental preference for schools, but LEAs still possessed considerable power to prevent this choice from being enacted to balance school numbers across an entire community (Allen, 2015, p.19). However, this Act was a key step in making parental choice easier, shifting the onus of saying 'no' on to the LEAs. With the passing of this Act, the LEAs were required to not only inform parents of their ability to choose a different catchment area from their own, but also required the LEAs to provide an explicit reason as to why they might be denying a parent's requested choice of school (Allen, 2015, p.20).

The *1988 Education Reform Act* increased diversity of provision by allowing more schools to open outside the control of the LEAs, but within the state system. This was done via the aforementioned City Technology Colleges (CTCs) and grant-maintained (GM) schools (discussed in section 2.4.2). The pilot network of 20 CTCs was announced by Sir Kenneth Baker (then Secretary State of Education), jointly funded by central government and industry partners. However, industry buy-in for this idea had proved to be limited, with

sponsors reticent to cover the capital expense associate with the schools (as envisioned), contributing only twenty percent of the funding required, leaving government with a 'large, and unexpected bill' (Walford, 2004, p.319). The 1988 Act protected this CTC movement, allowing government to give funding to the schools as it wished, thereby removing the dependence on industry. In the end, the CTC movement struggled to really get off the ground and faltered at 15 CTCs.

The movement towards greater diversity in school types was even further intensified by a White Paper in 1992, *Choice and diversity: a new framework for schools* (Department for Education, 1992). This was followed by new legislation which passed the Technology Schools Initiative. GM and voluntary schools could apply for technology school status, whereby they received substantial grants to develop a specific curricular specialism (Taylor et al.,2006). This status signalled a move away from comprehensivisation and a return to and extension of selection, as these schools were allowed to select up to twenty percent of their intake based on ability and aptitude in the particular specialism (e.g. technology, sport) at the school (ibid, p.49).

There is a strong similarity between the Conservative policies and that of the succeeding New Labour government in terms of diversity of provision (ibid). New Labour policies fostered school diversity not only because they wanted to try new measures in their drive to increase standards, but also because they wanted to ensure that more options and resources were available for more disadvantaged communities (ibid, p.50). With the publication of the 1997 White Paper *Excellence in Schools,* GM status formally ended, and while this might have appeared to signal a move back towards comprehensivisation, it actually made way for even more school diversity. The way schools were to be governed and grouped became more diversified with community schools (LEA control), voluntary-

aided schools (mostly faith schools), and foundation schools (West et al., 2004, p.348). The White Paper also allowed CTCs to continue to function as independent state-funded bodies. The *School Standards and Framework Act* of 1998 further expanded on this programme of diversity with the expansion of the previous governments' specialist schools. Schools of all types were now able to apply for specialist status, in which they still taught the National Curriculum but had a special focus on a specific subject area. Further diversification was seen with the creation of the Academies (see Section 2.4.2 above). When initially launched, academies were intended to bring more resources to the most disadvantaged areas, but by the time of the (2005a) White paper *Higher Standards, Better Schools for All*, the academy model was valued in its own right, with the government pushing for an increase in Academies as a more accepted structure of school in secondary education (ibid, p.54). The 2005 White Paper (subtitled *More Choice for Pupils and Parents*) marked a further move towards a diversity agenda and increased choice from New Labour. Described as a paper with 'two distinct halves' (Lupton & Obolenskaya, 2013, p.10), this White Paper, on the one hand, dealt with matters of curriculum and pedagogy, and emphasised personalised learning and helping those children who were falling behind, and on the other advocated for increased diversity and more choice. Lupton & Obolenkaya (2013), amongst others, argued that this increased emphasis on diversity and choice contributed to heightened competition and behaviours making it inherently incompatible with personalisation of education. While a widespread expansion of market reforms never came to fruition under New Labour, these reforms paved the way for the Coalition government's more substantial changes. It is important to note (and will be covered in more detail in Chapter 4 when the policies shaping the development of the Studio Schools are explored) that a key characteristic of New Labour's diversity agenda was the 'importance of collaboration between schools' (Taylor et

al., 2006, p.63). It is important to understand, however, that they paradoxically tried to increase competition in the education market while trying to facilitate collaboration/cooperation and sharing of resources between schools (also further elucidated in Section 2.4.6).[31] As we will see, this was an underlying problem for Studio Schools as they sought to establish their place within the spectrum of educational provision.

The Coalition government that followed in 2010 moved the process of diversifying schools far. The 2010 *Academies Bill* (as introduced in Section 2.3) allowed all schools to convert to Academy status resulting in a dramatic increase in the number and diversity (Walford, 2014) of secondary schools in particular. The Academies Bill also made provision for the creation of Free Schools which were built on the ideas of the sponsored GM schools. This act included provision that allowed entirely new schools could be established as Academies (a move away from the conversion-only model) (ibid). This Act also facilitated the creation of UTCs and Studio Schools. The Coalition government, in fact, bolstered efforts to support the creation of these new types of schools through the development of the New School Network.[32] The subsequent Conservative government (2015-2018) made it even easier for academisation, with the introduction of the *Education and Adoption Act* which came with the promise to 'sweep away bureaucratic and legal loopholes' obstructing the conversion of local authority schools into academies (Adams & Perraudin, 2015). The 2016 White Paper *Education Excellence Everywhere* further proposed that every school should be

[31] It has been argued (Paterson, 2003; Walford, 2002) that New Labour's investment in collaboration while promoting diversity is what helps distinguish its approach to diversity from previous administrations, in that these policies attempt to 'mute the impact of the market' (Walford, 2002, p.62) on the less advantaged and more vulnerable schools that operate in it.

[32] The New School Network was set up by the Coalition government and was designed to help interested groups of parents, businesses, and organisations with the application process to become a Free School. It was set up to (and continues to) provide support and resources to newly created Free Schools.

an academy and gave unequivocal backing to the creation of more UTCs and Studio Schools as well.

The next section will focus on the changes in accountability over the years contributing to the decisions that schools make when determining curricula and diversity of provision.

2.4.4 Accountability measures

The idea of performance measures and accountability of the quality of education is not a new one. As early as the 1840s to 1850s, there were a number of initiatives in schools that involved payment based on results (Gerwitz et al., 2019, p.2). The *1861 Newcastle Report* effectively recommended that this payment by results be adopted nationally leading to the *Revised Code* of 1862. This code required that at state-funded schools, pupils should take an annual exam (focused on the '3 Rs – reading, writing, and arithmetic) (ibid, p.3). The results of this exam were what determined the size of the grant that would subsequently be awarded to the schools and ultimately set teachers' salaries (ibid, p.3). The authors (ibid) highlighted that the *Code* resulted in heated debates that continue into the present day, such that advocates of the policy firmly believed that by creating this system of 'accountability' the state was able to not only take further control of education (as examined in Section 2.4.3), but also helped drive up quality (Gerwitz et al., 2019, p.3). Critics of this Code highlighted that this results-based payout and emphasis on only certain subjects resulted in a narrowing of the curriculum, the introduction of the idea of 'teaching to the test', and an overall decline in the quality of teaching (ibid).

Where this payment by results was abandoned by 1895, the increasing prescription of curriculum by governments continued through the 1904 *Regulations for secondary schools* which stipulated that certain subjects had to be taught in schools, setting the

minimum hours to be devoted to English, history, geography, mathematics, and science (Gillard, 2018). In 1926, however, curriculum prescription was abandoned, and schools entered the 'golden age of teacher control' (Lawton, 1980, p. 22). The *Education Act* of 1944 further encouraged this freedom as the curriculum was delegated to the purview of local authorities setting up a 'notional partnership' (Harris, 2012, p.514) between central government, local authorities and teachers. Ultimately however, the LEAs controlled schools organisation, admissions, and the curriculum; the curriculum, in particular, was viewed as a 'secret garden' (as coined by James Callaghan in 1976) into which no politicians or civil servants were allowed access (Jenkins, 1996). The *Assessment of Performance Unit* was subsequently established in 1976 which was designed to find new ways of monitoring and assessing students to identify underachievement (Gillard, 2018). This freedom in curriculum content and delivery changed significantly, however, with the election of successive Conservative governments in the 1980s and 1990s. The *Education Reform Act* of 1988 created a National Curriculum and the General Certificate of Secondary Examination (GCSE) (which replaced the O level and GCE examinations). The content of the GCSE was placed directly under central government control (Gillard, 2018), altering the 'existing power structure' (Harris, 2012, p.516). The *Schools Act* of 1992 strengthened the central state's control over schools by bringing the national inspectorate back under the direct control of central government (what is now OFSTED). Parental choice was supplemented by the publication of school results, which resulted in not only more information being made available to parents, but also fostered in an era of competition between schools through the establishment of league tables (Gerwitz et al., 1995).

The New Labour years (1997-2010) were marked by an increased focus on performance measurement with the avowed aim of improving the standards of schooling

and reversing the 'inequitable effects of the previous governments' (Gerwitz et al., 2019, p.3). School and teacher accountability were further increased through enhanced performance 'metrics' that were introduced through the 1992 *Education Act*, which set floor targets for students' performance in secondary schools, irrespective of their catchment area.[33] In 2004, the government introduced a 'floor standard' to identify schools that were failing to meet performance expectations (Ingram et al., 2018, p.546), setting up an accountability regime that would come to dominate the landscape of provision. Schools that failed to meet these floor standards would be subject to higher levels of inspections.

In 2010, the Coalition government introduced the English Baccalaureate (EBacc), a measure that took into account the percentage of pupils entered for achieving a good result in English, mathematics, the sciences (including computer science), a language, and a humanity subject (history or geography).[34] Following an intense period of changes to the GCSE and A level qualifications, the Conservative government, in 2016, changed the key accountability measure at GCSE from five good passes to Progress 8.[35] This stricter measure held schools accountable for the progress that students made from Key Stage 2 to Key Stage 4 in eight subjects (Ingram et al., 2018). These increasingly stringent changes to the accountability measures have faced critique (Gerwitz el al., p.19), echoing some of the arguments heard as far back as the 1860s. As schools were evaluated against these measures, teachers found themselves under intense pressure to meet these targets, it was

[33] Metrics are a concept that has its origins in New Public Management (NPM), an approach which aimed to make 'public management more business-like' (Baird & Elliott, 2018, p.536). Metrics and NPM were championed under New Labour, however, this review does not have the focus or the space to discuss the complicated metrics that were developed under the successive governments. For a detailed overview, please read Gerwitz et al., 2019

[34] To learn more about the EBacc, please visit: https://www.gov.uk/government/publications/english-baccalaureate-ebacc.

[35] To learn more about the Progress 8 performance measure, please visit: https://www.gov.uk/government/publications/progress-8-school-performance-measure .

found that this led to some teachers' adopting practices that were not in the best interest of students (Ingram et al, 2018). The emphasis on certain subjects versus others embedded within accountability measures (be it in 1862 or in 2016) has also led to a narrowed curricular focus (Maguire et al., 2020) that schools contend with when trying to design a relevant offering to their communities. The historic focus on English and mathematics only, for example (prior to the EBacc) sometimes neglected the role of science, and within the EBacc, where there is now an emphasis on science, it is still predicated around a narrow definition of core academic subjects, forcing schools to make curricular choices that may not necessarily be relevant for the type of offer they wanted to provide (Reynolds & Kelly, 2013) – a notion that is important to remember for the development and trajectory of individual Studio Schools.

The next section will explore the changing curricular emphases in secondary education by considering the place of vocational education and employability in secondary schools and will introduce the key policies that have had an impact on this.

2.4.5 Curricular emphasis in state-funded secondary schooling

2.4.5.1 Vocational initiatives in secondary schools

This section provides a brief understanding of the curricular focus of secondary schools in England, particularly focusing on policies around vocational education that have influenced the development of the Studio School model. This section by no means seeks to provide a detailed account of the history or ideology of the deployment of vocational education and training in England (for this, see, McCulloch, 1989; Brown & Keep, 1999; West & Steedman, 2003; Unwin, 2004, for example), but instead aims to present the ebbs and flows of focus of vocational initiatives in secondary education that may have influenced the development of the Studio Schools.

Since government assumed responsibility for education, numerous inquiries and initiatives have grappled with England's tendency towards a lack of robust provision of technical education. As early as 1867, the *Report Relative to Technical Education* was published which observed that Britain was at a distinct disadvantage to other parts of Europe based on the lack of technical training available, and this initiated various attempts to strengthen the offer of technical training in formal education (Gillard, 2018). As early as the 1880s, the first polytechnics in London were set up to offer training in the technical trades for young people and adults. The start of the twentieth century saw the establishment of the Junior Technical Schools (JTSs) across England and Wales which offered two-year courses in engineering and building for boys, and commercial training such as typing and bookkeeping for girls (Gillard, 2018). Even though these institutions were in existence, there was still very much the perception that schools should not be involved with industry (Evans, 2007). The 1920s and 1930s saw little progress in the evolution of technical education due to economic depressions, and subsequent limitations on public expenditure (ibid). The 1938 *Spens Report* recommended that the JTSs be converted into technical high schools to elevate the status and quality of technical education, something the report expressed was sorely needed to match the technical skills and advancement seen in the rest of Europe. These recommendations, however, were turned down by government at the time.

As noted in previous sections above, *The Education Act* of 1944 laid the foundation for a Tripartite system of education allowing for the creation of Technical Schools (JTSs can be considered their precursors) intended to widen the secondary school curricular offer to include vocational aspects. However, many LEAs were reticent to set up these technical schools, in part due to the high cost associated with the equipment that was required, and

in part due to the lack of buy-in to for the concept of the schools (Evans, 2009). In effect, the system was more Bipartite, and the lack of impetus to set up the technical schools can be considered one of the first indicators of the future battles for technical and vocation education initiatives in England (ibid).

The 1945 *Percy Report* and 1946 *Barlow Report* both advocated for the establishment of highly specialised technology institutions (converting some of the technical schools) which would sit within an 'integrated system of schools, technology colleges, universities and industry' (Evans, 2007, p.33). Both these reports expressed concern at the lack of emphasis on technical education in England and sounded a call for action. This period was also marked by a growth in the number of further education and technical colleges marked by increasing adult education with colleges admitting more students after the compulsory school leaving age (Evans, 2009). These colleges catered for both full-time and part-time students and the range of students and provision being offered (including some degree programmes) started to diversify. Despite the emphasis on reforms of further and higher education, vocational training at this stage was still very much left in the hands of industry and support of a few employers.

It was only in 1956 that the White Paper *Technical Education* took some of the previously made recommendations into account and advocated an expansion of technical education at all levels. The 1963 *Newsom Report* subsequently laid out the case that for those students who it would benefit the most, vocational courses and the option for work experience should be made available under the umbrella of secondary schools (Evans, 2009). This was followed by the 1964 *Industrial Training Act* which sought to involve government more directly in employers' training practices. Where further education and

colleges continued to grow, and despite the calls for this, there was still little movement on introducing vocational initiatives in secondary schools.

The 1970s were marked by increasing concern with the employability of young people, with (the above mentioned) James Callaghan's speech at Ruskin College (1976) becoming the 'rallying cry for a closer relationship between education and industry' (Huddleston, 2020, p.9). Most of the advances in technical and vocational education that had happened thus far had occurred alongside secondary schooling (not within it), resulting in a fragmented and complex landscape of providers (Evans, 2009). The period between 1979 to 1986 was marked by increased attention given to pre-vocational courses and qualifications, and general education built on occupational interests (Wright & Oancea, 2004). Most notably, in 1982, government alongside the Manpower Services Commission[36] introduced the *Technical and Vocational Education Initiative (TVEI)*, which represented the largest innovation in the secondary school curriculum in the 1980s (Evans, 2009). TVEI introduced a technically and vocationally oriented curriculum into secondary schools, with a view to increase the number of pupils staying in full-time education after the compulsory school leaving age (Keep & Mayhew, 1988). An additional goal of the initiative was to facilitate 'partnerships between schools and further education (FE) colleges' (Evans, 2007, p.46). The programme was launched in 1983 as 14 pilot projects for 14–18-year-olds and involved 200 different schools and colleges. The school curriculum was re-shaped to be more relevant to post-school education and employment and students took courses across

[36] The Manpower Services Commission (MSC) sat outside of the Department of Employment in the Conservative Government of 1973. The MSC was responsible for the co-ordination of employment and training in the United Kingdom. The MSC was a commission whose membership was comprised of representation from industry, trade unions, local authorities and education providers (Williams & Raggatt, 1996).

several commercial, technical and vocational qualifications.[37] TVEI faced considerable resistance from the LEAs and was beleaguered by high costs, and an inability to secure the employability skills-related curriculum coherently across the initiative. The programme was thus reduced in scale to make way for the CTC initiative in 1987 and was eventually abolished in 1997 (Evans, 2007). Another measure introduced at the time (1983) was the introduction of the Certificate of Pre-Vocational Education (CPVE), which had the aim of boosting the importance of pre-vocational elements in secondary school (as a post-16 qualification). This new qualification aimed to have students spend 60 percent of their time on academic curriculum, and 40 percent of the time to be taken up by vocational studies and job specific studies (arguably, this has served as the inspiration for the split of instructional time adopted at both UTCs and Studio Schools). Pilot projects were launched in 1983, but the qualification never gained full acceptance in schools, colleges or the labour market. The 1986 White Paper *Better Schools* recommended linking of education and training for 14-18 years olds more explicitly with the world of work (Wright & Oancea, 2004, p.9), while maintaining a broad, and balanced curriculum that was differentiated enough to offer personalisation.

Although discussed in detail from the perspective of diversity in Section 2.4.3, there is a need to recognize that CTCs also aimed to increase the role of employers in secondary education (Huddleston, 2020), offering curricular choices with more relevance to post-school employment. As with TVEI, CTCs faced much resistance (as discussed in Section 2.4.3) and the initiative ceased after just 15 schools were opened. After the failure of these specialist institutions to take root, the focus for vocational education in secondary schools

[37] New innovative courses were introduced in subjects such as biotechnology and commerce. TVEI had the freedom to work outside of the curricular offers at the time to ensure authentic links to work.

shifted to the types of qualifications on offer and their quality, rather than on institutional structures (Evans, 2007). Following the publication of the White Paper *Education for the 21st Century* (1991), the General National Vocational Qualifications (GNVQs) were introduced in 1992 building on the CPVE initiative (i.e., introduced as another post-16 qualification). Introduced at three levels of learning, these were aimed at young people in post-secondary school who wanted to keep their career options open and not take specific National Vocational Qualifications (NVQs) – essentially meaning that some courses on offer to post-16-year-olds were now vocationally oriented. It was hoped that these courses would provide a vocationally oriented route into university, however this proved problematic as universities were resistant to recognising these qualifications as entry points to their degrees (Evans, 2009).

In 1994, the *Dearing Report* on the National Curriculum recommended that there be three pathways available to students post-16: (a) academic, (b) craft and occupational (leading to an NVQ), and (c) broadly vocational (leading to GNVQs), and that vocational elements should be made available at Key Stage 4 as well (by taking time from the National Curriculum), thereby calling for more vocational emphasis in the whole secondary curriculum (Gillard, 2018).

In the early 2000s, it was announced that the GNVQs would be gradually phased out and replaced by new GCSEs in vocational subjects (driven by an intention (West & Steedman, 2003, p.12) to raise the status of vocational subjects). In 2002, the Green Paper *14-19 Extending Opportunities, Raising Standards* was launched which yet again introduced proposals for a coherent 14-19 phase of education; New Labour tried to put these proposals in place with a plan to create more 'flexibility … and put(s) the needs of the individual learner at the heart of the education system' (Department for Education & Skills, 2002). This

14-19 system was envisioned as a collaboration between schools and colleges to provide vocational opportunities within Key Stage 4 through an extension of the range of course options available to young people (also discussed in the sections above). To enable this flexibility, the Increased Flexibility Programme (IFP) was also established in 2002 which allowed 14-16 year olds to be 'disapplied' from the National Curriculum in schools to spend time at FE colleges or with training providers to study vocational qualifications (Huddleston, 2020, p. 14). The 2003 White Paper *14-19: Opportunity and Excellence* laid out the government's plans to reform vocational education by not only adding additional vocational qualifications, but also introducing hybrid GCSEs, allowing students to personalize academic and applied learning. The government also proposed that GCSEs and A levels would no longer be labelled 'academic' or 'vocational' to try and signal more equal standing between different kinds of subject and qualification (Wright & Oancea, 2004, p.29). To channel proposals for an education system that 'works well for all' (Working Group on 14-19 Reform, p.18) , the 2004 *Tomlinson Report* (the working group was created two years prior) laid out key proposals for yet further reform, which included the development of a framework for 14-19 phase of education, raising the status of vocational qualifications, and the development of an integrated Diploma qualification to replace the complicated mix of GCSEs, A levels, and BTECs. These Diplomas (Entry, Foundation, Intermediate and Advanced) covered a wide range of academic and vocational disciplines, effectively blurring the boundaries between them, 'aiming to reinforce the role of advanced vocational and occupational learning as a viable route into higher education as well as employment' (Wright & Oancea, p.30). All the proposals set forth in The Tomlinson Report were ultimately rejected (a move highly criticised by many, see for example, Pring, 2005) by the New Labour government save for the introduction of the vocational Diplomas through the

(2005a) White Paper *14-19 Education and Skills*. Rather than create a unified phase of 14-19 education which blended vocational and academic learning, New Labour chose to keep the existing 'gold standard' GCSE and A level examinations (ibid; Hodgson et al.,2017). The White Paper did however advocate the creation of a more personalised system for students, and still wanted to maintain flexibility for the offer of blended academic and vocational options; just the GCSEs had to remain. In 2007, the then Education Secretary, Ed Balls, announced the development of Diplomas to be launched by 2008. Despite being announced in subjects that were clearly vocational (for example, construction, engineering), the government insisted that these were academic qualifications (Gillard, 2018).

With the election of the Coalition government in 2010, the introduction of the Diplomas was scrapped, and a more traditional, binary tracking of vocational and academic qualifications was followed (See Section 2.4.6 for more details). With the introduction of the EBacc (see Section 2.4.4), the emphasis on the qualification offers for 14-16 year-olds shifted away from the incorporation of vocational qualifications to a more traditional academic subject-based curriculum. A major review of vocational education for 14–19-year-olds was initiated, which was published as the *Wolf Review* in 2011. This review (Department for Education, 2011) proposed a major overhaul of the vocational qualifications on offer at the time, including a significant reduction in the number of qualifications, a de-emphasis of a vocational curriculum focused on 14-16 year-olds, and a proposal that funding should be on a per-student basis post-16 as well as pre-16 (arguably heralding the changes seen in 2014, as discussed in Section 2.4.2 above) . Fast forwarding to 2016, and following the publication of the *Post-16 Skills Plan*, the Conservative government set out its plan to establish a system by which every young person at age 16 could choose between pursuing an academic qualification (A levels), or a new technical qualification,

which have come to be known as T-levels. Students will now be able to choose from one of 15 technical education 'routes'. Aligned with a group of skilled occupations, these T levels are designed be the technical equivalent of A levels. These proposals therefore once again shifted the emphasis of vocational education even further into the sphere of post-16 schooling.

Where vocational and technical education do go hand in hand with employability (Huddleston, 2020), there were a few key initiatives around the development of employability skills that have persisted, despite the wider failure of initiatives to make an inroad for vocational education in secondary schools. There are also parallel initiatives that over a long period have claimed to boost employer engagement in schools. As employability and employer engagement are central to the raison d'etre of Studio Schools these are the initiatives and policies that will be considered in the next sub-section.

2.4.5.2 Employability and employer engagement in secondary education

It was only with the publication of the 1963 *Newsom Report* that there was a formal promotion of employer engagement in secondary schooling (Huddleston, 2020); the publication of this report was followed by an introduction of work experience for those attending school. The period following James Callaghan's speech in 1976 was one that witnessed the growth of the schools-industry movement, which 'encompassed a range of projects, organisations and government interventions with a variety of foci, all with the purported aim of changing the relationship between education and the wider economy in some way' (Huddleston, 2020, p.9). As Huddleston outlined, even though the TVEI initiative ultimately was not successful (Section 2.4.5.1), it resulted in work experience becoming a relevant and visible part of secondary education.

In 1988, an initiative was launched by government to create an 'enterprise culture' (ibid, p.12)[38] through employer engagement in schools, colleges, and universities. The *Enterprise and Education* White Paper saw the establishment of services and partnerships (usually one in each LEA) that were intended to help facilitate a close link between employers and schools. Teachers were given additional training to encompass 'enterprise, economic and industrial awareness '(Huddleston, 2020, p.13). Overarching education-business partnerships (EBPs) were launched in 1991 to try and create a central strategy for the individual school-business partnerships that were evolving everywhere. EBPs became responsible for ensuring that all 14–16-year-olds had work experience opportunities available. These partnerships ceased to exist with the passing of the Academies Act (Academies Bill) in 2010.

The early 2000s saw a marked increase in interest in education-industry collaboration culminating in the *Davies Review* of 2002; following this review the government aimed to provide enough funding to every secondary school by 2005-2006 to run enterprise experience activities for 14–16-year-olds (ibid). Enterprise Education was rolled out as a concept formally in 2005 amidst all the curricular reform involving vocational qualifications that was happening at the same time (see Section 2.4.5.1 above). With all these changes, work-related learning became a statutory requirement for Key Stage 4 to include all pupils from a young age (Department for Children, Schools & Families, 2008c). Careers education, which had been non-statutory before, became a statutory requirement

[38] There is critique of the word 'enterprise' as there is no precise definition of it as a concept (Huddleston 2020). This review does not seek to debate the language of this, however. That said, there are many initiatives and programmes that were launched by New Labour to promote the growth of these enterprise skills in students, including Studio Schools (please see Chapter 4 for further detail).

in 2009. As will be further illuminated in Chapter 4, the Davies Review and the reforms it put in place, were a key driver in the creation of Studio Schools.

Huddleston (2020) also highlighted that of the many changes that were recommended by the 2011 *Wolf Report* (Section 2.4.5.1), a key change in terms of work experience and the development of employability was the recommendation to 'remove [the] statutory duty to provide every young person at KS4 with a standard amount of 'work-related learning' (Wolf, 2011, p.17). The recommendations also shifted the idea of work experience to be an offer only for 16–19-year-olds, an element that has manifested in the design of the above mentioned T-levels.

This section has provided a whirlwind overview of the complex and persistent series of changes in vocational and employability-related initiatives and policies that have contributed to the messiness of English education. It is by no means an analysis of the merits or demerits of these initiatives, it but served to provide the evidence of shifts in emphasis in order to help build the context for the history and evolution of Studio Schools. What the sections above have demonstrated is that there have been various attempts over a long period to inject a more vocational offer into lower secondary schooling (14-16), for example TVEI, but these have generally lost out to a tendency to see academic standards and qualifications as the central goal of this phase of education and shifting emphasis for a vocational curriculum for post-16 students. The answer from the government's perspective currently is to see the upper secondary phase 16-18/19 as the place where the vocational (now re-labelled technical) can have status –If this model prevails, it raises big challenges for UTCs and Studio Schools, which are predicated on the notion that a vocational orientation has merit in the lower secondary phase.

2.4.6 14-19 education in England

The concept of 14-19 education and training (such as deployed in the Studio School model) was one that has re-appeared several times in the history of English policy in secondary education. As can be seen from the sections above, the idea was considered with the TVEI and CTC initiatives in the late 1980s and early 1990s and resurfaced again in 2002 in official policy documents with New Labour's proposed introduction of a 14-19 phase of schooling and the Diploma qualifications. Throughout the 1990s, there was a push by many education researchers, think tanks, and politicians for a move towards a coherent and integrated 14-19 phase of secondary education (Pring et al., 2009a; Hodgson & Spours, 2012a, 2012b, 2015). It is noteworthy that even amongst its supporters, there has been little to no advocation for separate institutions offering a 14-19 phase of education, but for a re-thinking of the purpose of 14-19 education (Pring et al., 2009b), and for the need for greater collaboration at the local level to deliver a unified approach (Hodgson & Spours, 2008).

It is important to take a moment to consider the demands that the Nuffield Review of 14-19 education (Pring et al, 2009a) made of government. In the 'largest review of education since the Crowther Report in 1959'(ibid) the Nuffield Review (2003-2009) challenged government to re-think the purpose of education, and to bring a sense of coherence to the fragmented interventions dotted the English education landscape. The review called for a 're-assertion of a broader vision of education' (ibid, p.4) to encompass a broader view of learning, one that went beyond academic ability, and made room for the development of self-esteem in young people, and facilitated them becoming more 'responsible members of the community' (ibid, p.10) The Review also (while also calling for a reform of assessment and qualifications) called for a higher emphasis on collaboration between schools, colleges, work-based learning providers , higher education, and employers

(which has been heard many times before as evidenced by Section 2.4.5) to provide a 14-19 training that could facilitate high quality pathways that would fit the individual learner.

Hodgson et al. (2017) have made the case that English policymakers have flitted between 'linked', 'unified' and 'tracked' approaches to 14-19 education.[39] Policy that came closest to the adoption of a 'unified' approach was the Tomlinson Report (as described in Section 2.4.5 above), However, given the rejection of the proposals, what New Labour advocated (between 2002-2010) is what Hodsgson and colleagues (2017) labelled a 'linked' approach to 14-19 education (ibid, p.16). Schools had the option to offer more vocational qualifications within the 14-16 curriculum, and they were encouraged to collaborate more closely with colleges and other schools to provide a more varied range of qualification options to students . This was ironic given the sense of autonomy and competition New Labour was also facilitating hand-in-hand at the time (as evidenced in Sections 2.4.2-2.4.4); after all competition and collaboration are not fair friends.

Hodgson, Spours and Rogers argued that what is now actually seen in education was the result of a 'tracked' approach to 14-19 education (2017, p.18). With the introduction of the EBacc (Section 2.4.4), and the most recent reforms on vocational qualifications (Post-16 Skills plan, Section 2.4.5), there is a push for more distinct forms of academic and vocational education through qualification only at the post-16 level. Whilst there has recently been some advocacy by politicians for both UTCs and Studio Schools (see Section 2.1) to be used

[39] This builds on work by Hodgson and Spours (2011) which described all general and vocational education as one of the following three categories based on curriculum, qualifications and assessment:

- Tracked – separate curricular, qualifications and assessments arrangements for vocational and general education.
- Linked – Similar to the above, but with some common elements present in both vocational and academic tracks , e.g. English and mathematics.
- Unified – a common set of learning outcomes with options for specialisation beyond this; a single form of certification at the end of the phase (e.g baccalaureate).

as a conduit for building more technical skills and having a better link to work at the pre-16 level, there has been no formal policy that has laid the groundwork for a separate set of institutions that have a 14-19 approach, nor an attempt to address what type of education a 14-19 curriculum should even deliver.

2.4.7 A short note on disengagement in secondary schooling in England

There have been a number of policies that have been introduced in the sections above that have sought to address or have contributed unwittingly to levels of disengagement of students in secondary schools. The notion of disengagement is one that is complex and is usually situated in the literature on those who are NEET (Not in Education, Employment, or Training) or that which deals with school exclusions. Where the Studio Schools were set up, in part, to help re-engage students at the secondary level (see Section 2.1), they were not set up as alternative provision schools (the rationale for this will be explored in Chapter 4), and so policies to do with alternative provision and school exclusions have not been explored.

In an influential longitudinal study[40] conducted by the National Centre for Social Research, Ross (2009) identified four general categories for type of students on a scale of engagement. The research found that 23% of the students in Year 9 were 'disengaged from school not education' (ibid) where12% of the students were 'disengaged' (completely, from education as well). These two categories of students were those that represented the higher risks of exclusion and drop out, i.e becoming NEET.

The number of permanent [0.06% (2012/13) to 0.10% (2016/17)] and non-permanent [3.51% (2012/13) to 4.76% (2016/17)] exclusions from schools has risen (Cole et

[40] This data was based on data that was collected by following a nationally representative sample of young people from 2004 to 2007 as they progress from Year 9 to Year 11 in schools across England.

al., 2019, p.375) indicating that this is not a problem that is being addressed by current policy. Researchers have found that there has been a shift towards 'condoning exclusionary practices' (ibid, p.385), with policies from the Coalition government onwards, indicating that there was less emphasis on addressing the needs of those students who have been identified as disengaged and therefore the highest at risk for exclusion. Changes to schools' inspection criteria, a tightening accountability framework, a less flexible curriculum, less local control, lowered budgets (issues all addressed in the sections above) were identified (ibid) as key reasons why schools are currently failing to adopt an inclusionary approach to tackling disengagement and exclusion.

Policies of particular relevance to the development of Studio Schools are ones that stem from what has been referred to as the 'period of enlightenment' (Garner,2013, p.332) which spans the New Labour years from the late 1990s to 2010. This period represents a time when permanent exclusions (driven in part by student disengagement) from school saw a fall from 0.16% of student population (in 1997/98) to 0.06% of student population (in 2012/13) (Cole, 2015), from policies that were introduced both in the mainstream and alternative provisions sector. A policy of note to the development of the Studio Schools model (which chose to be located in the mainstream school sector, something that will be explored in Chapter 4) is *Every Child Matters*. This paper set an agenda for 'inclusive practice' (Cole et al, p.385) for addressing behaviour and engagement in schools. This policy resulted in cooperative behaviour between national and local institutions putting into place initiatives that would help tackle disengagement in a measured, joined-up way, something that researchers believe is diminishing in secondary education today (ibid).

2.7 Chapter Summary

This chapter has sought to serve a few purposes. One was to introduce the structure of the Studio Schools and its network. It also presented the limited evidence base for Studio Schools and situated the objectives of this doctoral thesis within it.

This chapter then sought to outline the key debates and policy changes that have been prevalent in STEM education in England. It has also explored these debates to set the context for how the adoption and enactment of a STEM specialism impacted on the role of the Studio Schools.

A distillation of the ever-changing and complex landscape of policies that the development of Studio Schools may have been influenced by and have continued to navigate has been presented. This provides the context for Chapter 4 to explore the creation of the Studio School model and its envisioned role, situating it within the policies that have been introduced here, such as personalisation of education, competition, enterprise education, and a linked/unified approach to 14-19 education. The themes introduced in this chapter will also be returned to in Chapter 8, when lessons for policymakers and new institutions are considered.

Chapter 6 will look at the reasons why Studio Schools have chosen to offer STEM qualifications as their headline offer to understand how it ties in with the debates that have been presented in this chapter. Policies have evolved significantly since the Studio Schools were first envisioned, making it all the more important to understand how the role of the Studio Schools has or has not been shaped by the prioritisation of a STEM offer and by this complex landscape of policymaking.

CHAPTER 3 - Research Methodology

3.1 Research Design and Rationale

This chapter introduces the research design employed in this study and elucidates and reviews the scope and sources of data collected to do so. It also addresses the inspiration for and the use of the conceptual framework that was employed to make sense of the data. The ethical considerations for the participants are also discussed, along with a description of the analysis procedures and the validation techniques that were employed to ensure robustness. Finally, I discuss my researcher positionality.

Overall, this study has utilised a qualitative research design to answer the overarching research question, with three operational questions:

What is the evolving role of Studio Schools in English education?

a) What was the envisioned role of Studio Schools and what were the major policy ideas that have shaped this?

b) What key factors influenced Studio Schools to have a STEM specialism?

c) What role do Studio Schools play in the educational landscape and how does the adoption of a STEM specialism have an impact on this role?

The research questions for this study were intentionally kept broad and open to build a picture of otherwise largely, unexplored territory. I sought to understand, contextualise, and analyse from participants with first-hand knowledge how the adoption of STEM specialisms in Studio Schools has impacted on the enactment of their institutional role within the educational landscape; a model about which relatively little is known (Section 2.1.3). Within the realm of qualitative research design, a case study strategy was chosen as this approach is often adopted, with success, when trying to understand a 'contemporary phenomenon

within its real-life context' (Yin, 2013, p.13). Using a qualitative case study approach was particularly useful, as it allowed me to 'gain an in-depth understanding of the situation and meaning for those involved' (Merriam, 1998).

Yin (2013) outlined different types of case studies as being explanatory, exploratory, or descriptive. In this study, the approach taken meets the requirements for the case study to be considered as both exploratory and explanatory. An overarching exploratory approach was assumed so that the role of the Studio Schools can be investigated at length and in a manner that was unhindered by a confining and limiting a-priori theory. The explanatory nature of this study becomes more evident in the analysis and discussion sections of this chapter, with Ball et al.'s (2012) 'Policy Enactment framework' serving as the conceptual lens through which to distil the complex stories of the evolving role of Studio Schools. This conceptual framework will be discussed in detail in the next section.

3.2 Conceptual Framework

It is worth highlighting that the need for a conceptual framework so closely tied to understanding policy and policymaking was identified through the research conducted in the preliminary phase of this study (discussed below in Section 3.3.1). This phase highlighted how one cannot talk about Studio Schools without referencing the impact of policy, framing the need for a conceptual approach that would address the 'messiness' (Ball, 1993, p. 12) of policy implementation (nay, enactment) in secondary schools. The policy enactment framework (Ball et al., 2012) was therefore identified as the conceptual underpinning that could capture the nuances of policy work in schools. As outlined in Section 2.3, the manner in which this conceptual framework has been deployed in this study was inspired by the

work of Bathmaker (2019)[41] whose use of the analytical tools demonstrated the disconnect between policy and practice in the enactment of the UTC model of schooling. Bathmaker (2019) used the policy enactment framework by Ball et al. (2012) to conceptualise the UTC **model** as a 'policy ensemble' (See Section 3.2.1 below) as opposed to the individual schools only (as done by Ball et al. (2012)). Her research sought to understand the factors that influenced young peoples' decisions to attend UTCs, and how this was influenced by the very policies governing the school model as well as the external policy landscape. The students interviewed in her study were treated as 'policy narrators' (see Section 3.2.1.2 below) to understand their interpretations of the role of a UTC. The findings demonstrated how individual UTCs were shaped by not only the policy ideas shaping the UTC model but by an 'overwhelming presence of an A-C regime' in English policymaking through the construction of narratives from students at two UTCs (Bathmaker,2019, p.15). The analytical approach deployed in this study served as inspiration for this research as it helped to highlight the importance of understanding how 'policy is enacted and constituted in practice' (ibid, p.16). An approach such as this would be particularly important when considering a new model of schooling that has been purposefully designed and developed to address key policy ideas and debates.

It is for these reasons that this study chose to extend Bathmaker's (2019) analytical approach to similarly treat the Studio School model's intended role as a policy ensemble. A key difference in this study is that this ensemble was constructed in terms of the policies and policy ideas that influenced it at the time of creation (i.e., a historical understanding). The enactment of these roles was then explored in the context of the wider policy landscape

[41] Bathmaker and Ingram (2014) was the paper that was first used as inspiration. This was updated post - publication of Bathmaker (2019).

with particular emphasis on those Studio Schools that chose to adopt STEM specialisms. Another important area of distinction from Bathmaker's research is that the idea of policy narration was extended to capture the diverse voices of the key stakeholders at the school beyond students, to include senior leadership teams, staff, employers, students and school sponsors building a whole school narrative for the role of Studio Schools. Given the ever-changing policy landscape into which Studio Schools were born and have subsequently navigated (see Section 2.4), it made sense to adopt a conceptual lens would capture the fluidity of the interaction and enactment of policies in a school.

Where the above has sought to outline the inspiration for the ways in which Ball et al.'s (2012) analytical toolbox has been used in this thesis, what follows is a deeper understanding of the enactment framework itself.

3.2.1 Understanding policy enactment

Studio Schools were born into and continue to operate in a complex education landscape (see Chapter 2). In England, as evidenced in Chapter 2, policymaking has been (and is) rapid with an increasing emphasis on market reforms. This has involved a shift away from personalisation of the curriculum, a move towards central control, an emphasis on vocational education away from 14–16-year-olds, and ever tighter accountability measures leading to increasing competition amongst schools and colleges. In navigating the myriad of policy changes, schools, and by extension, new Studio Schools would be expected to enact multiple (often contradictory) policies (see section above) in just trying to function as a new school. Therefore, to generate the institutional understanding in this context a framework that would help to position and understand the development of the schools in in fast-paced and often contradictory policy climate seemed appropriate – the policy enactment framework.

In their influential work on education policy, Ball et al. (2012) argued that researchers needed to move away from the idea that policy is merely 'implemented' in schools. As discussed in Chapter 2 (see Section 2.4), the meaning of policy is one that is debated and defined differently by various organisations and people. As also alluded to in Section 2.4, there is no easy way to define policy, however, it is important to think of policy not as an object but as something that is a process , constantly being enacted in localised contexts and being worked and re-worked (Ball, 2013a). There also needs to be recognition that there is an important and often forgotten need for contextualisation in policymaking and its sphere of influence (ibid, p.16). Policy is frequently described as an 'attempt to solve a problem' (Ball et al., p.2) – a problem that is to be solved either via legislation or via a change in practice distributed on a national scale. Policy that is viewed and analysed only in these terms however, and that does not consider the process of policy and what it takes to bring it to life is one that Ball, and colleagues believed is 'marginalising' (Maguire et al., 2014, p.1) in nature.

Through the construction of the policy enactment framework, the authors (Ball et al., 2012) have provided policy research with a toolbox- one that seeks to challenge researchers to move from a notion of policy implementation to that of enactment. Enactment as described by Braun et al. (2010) encompasses the dual 'creative processes of interpretation and translation' by a diverse set of people, across a multitude of contexts (p.549). The first step of interpretation refers to the sense-making of policy (usually text), where the second step of translation allows for a recontextualisation of the policy considering local school factors and dimensions (Singh et al., 2014, p.826). It is this recognition of the context and the processes of adaptation to the appropriate context that moves implementation towards enactment (ibid).

A policy enactment framework therefore recognises that schools are constantly changing and adapting due to a myriad of reasons, and that policy will constantly be revised, possibly even forgotten (Ball et al., 2012). Schools, at any point in time, navigate a myriad of policies,[42] described as a 'policy soup' (Braun et al., 2011, p.581) that are mediated by institutional and external factors. Ball et al. (2012) have argued that by not adopting a lens of enactment, there is a tendency to assume that processes and effects can be isolated from everything else (Ball et al., 2012, p.10). This, the authors argued, was not representative of reality. The policy enactment framework (Ball et al., 2012) therefore rejects the conventional notions (Dale, 1989; Ozga, 2000, for example) of policy research where policy is considered to be an 'inert' (Ball, 2013b, p.26), finished product that is generated in isolation of everything else , and implemented without any adaptation to local context . The authors (ibid) also rejected the notion that policy is uni-directional, created only by a central state ,only to be implemented at lower levels by practitioners. This notion of policy enactment has gained traction with many researchers (for example, Perryman et al., 2011; Riveros Barrera, 2013; Singh et al., 2014; Tan, 2017; Nolan, 2018;Bathmaker, 2019)

In recognising that policies enter what the creators of the enactment framework refer to as 'different resource environments' (Ball et al., 2012, p.19) one needs to build an understanding that schools have specific origins, try to embody a certain culture and ethos, and even have very specific physical spaces within which they operate. To do so the authors described a set of 'objective conditions [to group] subjective 'interpretational' dynamics (Braun et al., 2011, p.588) or contexts that schools may have to navigate. These contextual dimensions were grouped as *situated*, *professional, material, and external* (ibid). *Situated*

[42] Ball et al. (2012), on conducting a policy audit, found that in the four case studies in their research, there were over 170 policies in play in the schools (p.7).

contexts take into account the histories and local understanding of where schools are placed; *Professional* contexts encompass the less tangible factors such as school ethos, professional development of staff, commitment to the school; *Material* contexts take into account the way staffing and budgets might be handled at schools , and even what infrastructure has been made available at the schools; and lastly the *External* dimensions take into account the external pressures such as local competition, OFSTED inspections, and even accountability requirements. The authors highlighted how important it was to build this understanding of difference and complexity even in those schools that might be considered 'superficially similar' (ibid, p.587) as the schools may be designed to have similarity the 'nuances of local context' (Thrupp & Lupton, p.309). This could mean that the schools look and behave in completely different ways. Studio Schools (as described in Chapter 2) are superficially similar, and yet will inevitably have had to adapt to their local contexts. In this study, all four of these dimensions have been considered and used to paint a picture of the individual Studio Schools and how they chose to bring their chosen STEM specialisms to life (Chapter 5).

However, policy enactment is not just about understanding the 'what' (above defined contextual variables and factors), but also the 'how' (the dynamics of adapting to the context) that shapes the embedding of policy in schools (Singh et al., p.827). This is done by creating an understanding of the voice of the different actors in secondary schools who are involved in the process of translation and interpretation within the realities of their own local contexts;

> policy [is] a process, as diversely and repeatedly contested and/or subject to different 'interpretations' as it is enacted (rather than implemented) in original and creative ways within institutions…….and their people. (Braun et al., 2011, p. 586)

Within this framework, Ball and colleagues (2012) have posited that 'schools are highly complex and internally differentiated organisations' comprising school leadership, teachers, students, and parents to name a few stakeholders. Schools are therefore not homogenous entities that passively **do** policy as one, they are made up of these diverse voices that are all simultaneously interacting with and influencing upon the myriad of policies that schools have to navigate. These actors are posited to be 'positioned differently and take up different positions in relation to policy, including positions of indifference or avoidance (Ball et al., 2012, p.49), and different groupings will be considered below in Section 3.2.1.2.

As stated above, drawing inspiration from the approach utilised by Bathmaker (2019) in her work on UTCs (see Chapter 2), the notions of policy ensembles and policy narrators from the enactment framework have been used to ground and understand the data collected in this study and is discussed further in sections 3.2.1.1 and 3.2.1.2.

3.2.1.1 Policy Ensembles

Policies (both national and local) can, in essence, enter a school as 'multiple, sometimes-conflicting directives and as discourses that inform[ed] [the] institutional narrative and shape[d] policy enactment' (Nolan, 2018, p.804). Ball and colleagues (2012) put forward the notion of policy ensembles (p.7) as a collection of 'ideas', or discourses that come together, and interact either symbiotically or in a conflicting manner, shaping the narrative of the organisation or structure that they have entered. Ball and colleagues (ibid) argued that where these policies (that make up an ensemble) are constantly changing and being revised and reviewed, it becomes incredibly important to try and understand their interaction with one another and consequently the effect of that interaction. As mentioned before, what counts as policy is hard to define, but for the purpose of this thesis and the creation of the Studio Schools' policy ensemble, big nation policies or as Ball defines them, 'big-P policies'

(Ball, 2013a, p. 8) and their associated discourses have been considered. Ball et al.'s (2012) enactment framework critiqued previous policy research indicating that there was a tendency to neglect this understanding and that there was a pressing need to understand how policies come together as sometimes this can have unforeseen consequences (ibid, p.5). As such, the intended role of the Studio Schools has been envisioned as a policy ensemble, with competing and synergistic policies and discourses (at the national level) coming together to shape the intended role of the new school model.

3.2.1.2 Policy Narrators

Ball et al. (2012, p.49) also identified a number of roles that different stakeholders adopt in the enactment of policies (described by the authors as 'actors'): narrators, entrepreneurs, outsiders, transactors, enthusiasts, translators, critics and receivers. Enactment is about policy realisation happening in 'real time' places where policy actors are humans and 'ultimately pa[y] different kinds of attention to different kinds of policies' at different times (Maguire et al., 2014,p.15). This varying attention and positioning allowed for the creation of typologies that are 'not fixed' (ibid) in time, which means that people in schools play different roles at different times, nor can they be reserved for specific stakeholders in the schools; the 'messiness' (Ball, 2013a) of policy enactment involves constant interpretation and movement between roles. The policy roles and positions that Ball et al. outlined are what allow for policies to come to life when all were working together or against each other, and for the different discourses to find different homes at different times. Indeed, when considering the categorisation within which to frame the interviews from key stakeholders, the different stakeholders could have been viewed as either policy narrators or even policy entrepreneurs, particularly in the case of school leadership. Policy narrators are those involved in the 'interpretation, selection, and enforcement of policies' (Ball et al., 2012,

p.49), responsible for the explanation of what the policy was and how it should work (ibid, p.50). Policy Entrepreneurs are those people in schools involved in the narration and interpretation of policies, advocating for them and responsible for building 'critical mass for change and to bring off policy enactments' (ibid, p.53). Where this study chose to build an institutional narrative by understanding the interpretation of what the role of the Studio Schools was from multiple perspectives, it made more sense to treat all stakeholders as narrators, each responsible for their own meaning making, as not all would be involved in the process of active advocacies of some of the policies. These narratives that from different groups of stakeholders were what were then compared and contrasted to create an institutional narrative. There is an argument that could be made that in treating all the key stakeholders as narrators, there is a tendency to reduce the relevance of the different positions and responsibilities in a school. Hence, great care was taken to ensure that when an institutional narrative was framed, even dissenting ideas were presented in relation to a particular theme (for e.g., in Chapter 7, the role of reinvention of the school captures the multiple ways in which this affects all the stakeholders, both positively and negatively).

Using a conceptual framework in this way provided the opportunity to gather general understanding and develop constructs into intellectual 'bins' (Miles & Huberman, 1994, p.18) allowing the 'conceptual framework to anchor the study during the data analysis process' (Baxter & Jack, 2008). Consequently, and to re-iterate from above, first, the Studio School model itself was viewed as a policy ensemble, and work was undertaken to understand the intended role of the model, the policies and political discourses that inspired it. The enactment of the model and the impact of the adoption of a STEM specialism in each individual school was then brought to life through the narratives of key stakeholders at each

school. Each individual group of stakeholders was treated as a 'policy narrator' to understand the different interpretations of the role of the Studio School. These narratives from the groups of stakeholders were further distilled into an institutional narrative to answer the research questions. The procedural steps for analysis have been explained in Section 3.6.

There were two phases to this study (mentioned in Section 3.2). The preliminary phase informed the design of the main phase and helped identify the key stakeholders in the individual Studio Schools playing an important role in enacting the vision of the Studio School, including the focus placed on STEM. Whereas Ball et al.'s (2012) study focused solely on teachers as the narrators of school policy, and Bathmaker's (2019) solely on students, in this study, all the identified stakeholders (described in detail in the next section) have been treated as 'narrators' who were able to give their own interpretation of the enactment of the Studio School model and its chosen specialism which resulted in their own version of each Studio Schools' role.

3.3 Research design – Two phases

Before the case studies were selected, preliminary research was conducted which served as the exploratory phase of the project, herein referred to as the **preliminary phase**. This phase was particularly useful as it helped to define the scope of the case study design, identify an appropriate conceptual framework to make sense of data, and created a set of themes that was used to begin coding the data collected in the next phase of research.

The second phase of the study, herein referred to as the **main phase**, formed the core of the data used for the analysis in this study. This phase involved the collection of data from key stakeholders (elites) involved in the creation of the Studio School model, as well as

from multiple actors across the four case study sites. Documentary evidence (discussed in section 3.3.3.2) was also collected and used to supplement this data.

Figure 3.1 provides an overview of the phases of the research study and illustrates the purpose of each phase. Each phase in this figure is described in detail in the ensuing sections.

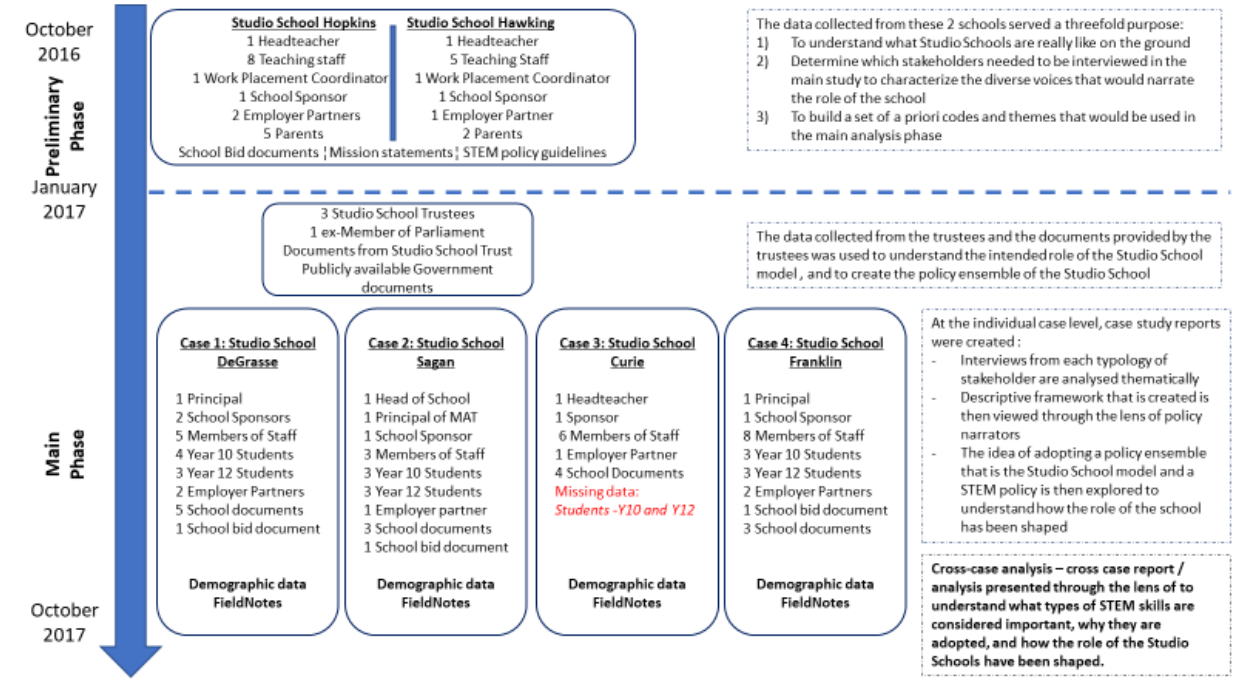


Figure 3.1: Overview of research design

3.3.1 Preliminary Phase

Given the lack of data available on Studio Schools at the start of this research in 2016 (and still true in 2020), there was a need to conduct some preliminary research which served a threefold purpose:

1) to understand what Studio Schools were like in reality, and what issues they faced in their day-to-day running;

2) to identify which stakeholders would be important to interview to build the narrative for the enactment of STEM and Studio School policies; and

3) to create a set of preliminary codes that were used in the analysis of data collected in the case study phase of the project.

Research was conducted at two Studio Schools – Hopkins and Hawking – that offered a STEM-based specialism or self-identified as STEM schools. At each school, the following groups of stakeholders were interviewed: head teachers, members of staff, parents, school sponsors, employer partners of the school, and any key members of the local authority who had been instrumental in local education planning activities. In total, 29 interviews were collected across the two schools. The interviews were semi-structured in nature and designed to be exploratory. Documents pertaining to school set up, mission, and intended goals were also collected from each school. Local community and demographics data were obtained from government statistics websites and databases.

3.3.2 Main Phase

This phase started with the collection of data from the creators of the Studio School model, that is the members of the Studio School Trust. These members were involved in the development of the model and had been with the Trust since its early days. Following this, an interview was also conducted with a key member of parliament (New Labour government, 2005-2010) who had been instrumental in the push for the establishment of the Studio School model. Semi-structured interviews were conducted with these four 'elites' (Dexter, 1970; Rice, 2010; Mikecz, 2012) to understand the intended role of the Studio School model. These interviews as a data source are discussed in more detail in section 3.3.3.1.

The design of the case study in this main phase was guided by understanding and insights generated from the data and analysis (see Appendix B) collected during the preliminary phase in three keyways. What was obvious from Studio Schools Hopkins and Hawking was that STEM skills were adopted and developed in very different ways across the Studio Schools (from qualification choice to learning activities to employer engagement),

which had an impact on the overall operational model and role of the school. This finding in the preliminary phase made it important for the case study sites selected for the main phase to reflect a diversity of STEM offerings. The analysis from the preliminary phase also helped identify those key participants needed to be selected for interviews from each case site to serve as policy narrators for the Studio Schools. As stated in Section 3.3.1, this phase also helped identify the need for a conceptual framework that would allow for an understanding of the influence of policy.

The following criteria had to be met for the school to be considered as a case study site:

- The Studio School's offering fell under the umbrella definition of STEM as defined in Chapter 2;
- The Studio School provided STEM specialism offerings for pre-16 AND post-16 students; and
- The Studio School could not be in its final year of operation.

Based on the first criteria, 25 different STEM Studio schools were identified (in 2016); the second and third criteria helped to narrow this field to 20. In the end, four schools were selected for data collection in the main phase of the research via a combination of purposeful and snowball sampling to try and capture the different ways in which schools deploy their STEM offering or specialism. Purposeful sampling was an important strategy to deploy as it allowed me to 'select individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study' (Creswell, 2013, p. 125). That said, one site was approached through snowball sampling as the principal at one school knew another principal who would be interested in participating in the research, thereby providing convenient access whilst still meeting the

criteria, outlined above. Table 3.1 provides an overview of the variety of the STEM skills on offer across the four schools that were ultimately selected.

Table 3.1: The four selected case study sites based on the offer of STEM specialisms

School Pseudonyms	Specialism
Studio School DeGrasse	2 specialisms - ONE is STEM: • Sustainable Construction and Logistics, • Business
Studio School Sagan (Self-described STEM School)	1 specialism • Space – Satellites and space technology
Studio School Curie (Self-described STEM school)	2 different STEM specialisms – • Electronic Engineering • Biosciences
Studio School Franklin	1 specialism – STEM only • Space – Aerospace and its applications

Once the Studio Schools had been selected and recruited, multiple stakeholders within each were identified for participation in the research. Selection of these participants was designed to provide as many different 'levels' of voices involved with that Studio School. The identification and selection of these participants is described in detail below in section 3.4.2.

3.3.3 Sources of Data

Data collection in a case study requires a wide array of sources to allow for an in-depth understanding of the case (Yin, 2013). The use of multiple sources of data allows for triangulation of data (Salkind, 2010), key for building credibility in qualitative research. Given the qualitative nature of this research design's inquiry across both phases of the research, the primary sources of data that were used included: semi-structured interviews, documents, fieldnotes and demographic data. An overview of the data sources from both phases of the research can be found in Tables 3.2 and 3.3 on the next page.

Preliminary Phase:

Table 3.2: Sources of data collected in the preliminary phase

Data Source	Type	Studio School Hopkins	Studio School Hawking
Semi-structured interviews	Qualitative	18	11
Documents	Qualitative	Yes	Yes
Fieldnotes	Qualitative	Yes	Yes
Demographic data	Quantitative	Yes	Yes

Main phase:

Table 3.3: Overview of the data collected from the four Studio Schools in the main phase of the research. The column highlighted in peach indicates the data that were used to build an understanding of the role of the Studio School model from the perspective of the architects of the model

Data Source	Type	Elites	Studio School DeGrasse	Studio School Sagan	Studio School Curie	Studio School Franklin
Semi-structured interviews	Qualitative	4	17	13	9	18
Documents	Qualitative	12	Yes	Yes	Yes	Yes
Fieldnotes	Qualitative		Yes	Yes	Yes	Yes
Demographic data	Quantitative		Yes	Yes	Yes	Yes

An important principle highlighted by Yin (2013) was the creation of a case study database. All the data collected (see Tables 3.2 and 3.3 above) were stored both electronically and manually where appropriate. All electronic data were backed up periodically, and as a general rule all data were stored soon after they were collected (either interview recording or document) to minimize the potential for data loss. Data collected from the main phase were stored per case study site in order to maximize ease of analysis at the individual case

level. The sections below describe the different sources of data in more detail and highlight the reasons why those particular sources of data were selected.

3.3.3.1 Semi-structured interviews

Semi-structured interviews were the main method employed to obtain various perspectives related to the STEM provision in Studio Schools. The semi-structured approach was chosen as it allowed for semi-flexible inquiry in which participants were able to move in unanticipated directions with their answers. This in turn allowed me to build a rich collection of data from the different key stakeholders. Each interview was designed to be 45 minutes long; in reality, they were between 20 to 80 minutes. All interviews were conducted either on site (at a school or office that was 'home' turf for the interviewee) or on the phone when a particular stakeholder was not available in person. Sturges and Hanrahan (2004) indicate that while telephone interviews provide less rich data, it is better than no data. Each interview was audio recorded, transcribed, and anonymised for analysis – the interview schedules designed for each phase of the research appear in Appendix A.

Preliminary Phase

The interviews conducted at the two Studio Schools in this phase were broad and covered the following topics: intended role and purpose underpinning the creation of a Studio School, understanding the choice of specialism, links to the local area, intended place in the local community, and reactions to the opening of a new school. These broad themes were used to build a better picture of how a Studio School functions and were also used to start developing an understanding of the different roles a Studio School can play in the community within which it lives.

Main Phase

The interviews conducted with the elites focused on understanding the rationale for setting

up the Studio Schools, and the intended objectives of this model for secondary education. They were also focused on establishing an understanding of the reasons driving Studio Schools to have a STEM focus. The interviews comprised a wide-ranging set of open and close-ended questions in order to build flexibility into the responses. This approach has been shown to be particularly helpful when interviewing elites (Richards, 1996). The questions were based on themes relevant to understanding what the envisioned role of the model was, and to understand how and what the Trust felt was important about the development of STEM skills in Studio Schools. Some of the questions in the interview schedule were based on policy changes that were occurring at the time of data collection, and some of the challenges that the school movement was facing as reported through the media.

The interview schedules for the case study sites were developed by adjusting the schedules deployed in the schools in the preliminary phase to focus on and probe topics relating to the individual Studio School's understanding of STEM, why the school had chosen to focus on a STEM specialism, and what role the different stakeholders envisioned the Studio School playing for themselves and for their local community. There were tailored schedules that were created for each type of stakeholder, to capture their diverse voices.

3.3.3.2 Documents

Burton and Bartlett (2009) argue that qualitative artefacts and documents offer an opportunity to concretely compare and contrast different institutions and reveal data that may not be obvious through interviewing, generating further questioning, and even leading to further discussion. In this study, artefacts and documents were collected from the elites and at the four different case study sites. Documents such as school mission statements, examples of student projects, and examples of project-based learning curriculum maps were viewed as 'informal' documents, or grey literature (Adams et al., 2016), allowing me to build

context for the different policies at play in the schools. Websites, newsletters, community news articles, and even school Twitter accounts were included in this type of data. More 'formal' documents included those that were indicative of what the envisioned role of the school or model was meant to be (these documents were collected from the elites), or those that explicitly focused on the individual Studio Schools' policies, such as school-specific STEM policy documents (if available). The documents that were obtained from the elites showed the evolution of the Studio School idea, concept development and the feasibility studies that had been conducted by the Studio Schools Trust as part of the original bid establishing themselves as the promoters of a new school model. Other formal documents include publicly available parliamentary documents. The bulk of parliamentary documents analysed included official Bills, transcripts of debates, committee proceedings and records of meetings with parliament or parliamentary officials involving the Studio School Trust or a discussion of the creation or role of the Studio School model (obtained through a focused search of Hansard). Not all these documents have been used for the framing of the analysis but were used to build a better understanding of the policy process involved in the creation and launch and positioning of Studio Schools. Formal documents were also obtained from each of the individual case study schools such as policy documentation and school creation bids. These documents were accessed through the most relevant institutional actors such as members of the Senior Leadership Teams in the school, as some of the documents were available only through them.

3.3.3.3 Fieldnotes

The majority of interviews with the participants from the schools were conducted on site at the schools. Where this was not possible, telephone interviews were conducted; this flexibility was particularly important for the interviews with employer partners and school

sponsors who were not always available on site at the school. Conducting the interviews on site was an important part of the research design as it allowed me to take detailed field notes with regards to how the individual schools functioned, and how they may have been designed to bring both their chosen specialisms and the Studio School model to life. This included, for example, observation of posters that may have been on the walls of schools highlighting achievements of great scientists; the way the day's timetable was structured; or even how a building may have been used to facilitate and enhance key elements of the Studio School model or even the school's chosen specialism. One such example of design and form serving a specific function is that of a cafeteria in the centre of one of the case study schools that was shared by students of all ages where they could mix and learn from one another - the heart of the school. This contextual description and analysis offered by these fieldnotes created the opportunity to build an understanding of the 'material, and external dimensions' (Ball et al., 2012, p.21) of the schools' navigation of policy.

3.3.3.4 Demographics

Demographic data were publicly available for each Studio School at the local authority and national level. These statistics were particularly important to have at hand when creating the individual case reports as they helped to enhance and create a deeper, more contextualized understanding of the communities in which individual schools were trying to establish themselves. For the large part, the demographics used were obtained from publicly available data at the Office of National Statistics.

3.4 Fieldwork

This study required high levels of access and recruitment of not only schools (and the identified key stakeholders within them), but also high-profile members of think-tanks, regional and national government – all involved with a school movement that has been

relatively under-studied and now heavily criticised. This section discusses how access was gained to the elites, the Studio Schools, and how participants for the case study were selected once the case study sites had been determined.

3.4.1 Gaining Access

The extant research on Studio Schools was largely journalistic in nature when this research commenced (2016), and not all of it placed the schools in a favourable light. I knew that gaining access for research would therefore be tricky and would require some initial work and relationship building. The first step to gaining access was to establish a relationship of trust with the Studio Schools Trust itself. To this end, I spent time connecting with (via snowballing) with members of the Studio Schools Trust, the Institute for Public Policy Research (IPPR) and the Edge Foundation (see Footnote 13 for more information on this charity) before even designing my research. As part of this relationship building, I served on an advisory group for a piece of research led by the Institute for Public Policy Research (IPPR) on 14-19 schools (see Sections 2.1 -2.3 for an analysis of and the relevance of this research: Cook et al., 2016; Thorley , 2017), which allowed me to build a better initial understanding of the Studio School movement and where it stood in the 14-19 education landscape. It was at this meeting that I met with the Trustees of the Studio Schools movement who proved amenable to having external research conducted on the Studio School model; these members they were cognizant of the low evidence base available on the schools and did not have the resources to conduct or fund any research themselves. It is through the Trustees that I gained access to the two schools in the preliminary phase of the research.

During the course of my DPhil, I also had the opportunity to serve as co-Investigator on another study looking at a key aspect of the Studio Schools – the CREATE employability framework (see Section 2.1.3 for an understanding of this work). As part of the work on this

project, I was introduced to the member of parliament who played a key role in moving the Studio Schools model through approval in government. This introduction was made via the Edge Foundation who funded that piece of research. It was through this introduction and during the period that I was able to collect data relevant to not only the CREATE employability framework, but also to this thesis.

A member of the Trust put me in touch with the two schools in the preliminary phase of the study; this member was in fact Principal at one of the Studio Schools, making acccess easier than anticipated. Once I had analysed the data collected from the two schools in the preliminary phase and was able to establish my criteria for schools for this research, I provided the Studio Schools Trust with a list of potential schools based on these criteria. The Trust was able to guide and connect me with the schools that they knew were not facing imminent closure. They put me in touch with the leaders of Studio Schools DeGrasse, Sagan and Curie. The first school I visited was Studio School DeGrasse, and it was through the Headteacher there that I was able to gain access to the leaders at Studio School Franklin. When approaching the schools, I did offer to 'give back' (Trainor & Bouchard, 2013) to the schools by talking to students about a career in engineering (this is relevant to my background, something that is discussed in detail in Section 3.8, or by volunteering my time to create projects for the students to work on, projects being a key ingredient of the Studio School model). Despite the everyday pressures of running a school, and the pressures facing Studio Schools by their very nature of who they were, staff at Studio Schools DeGrasse, Sagan and Franklin were welcoming of both me and the research whereas there was more hesitation and scheduling issues with those at Studio School Curie (driven partly by delayed consturction and entry into the bespoke school building for the Studio School and tensions between the Studio School and its MAT – these issues will be returned to in Section 5.2). It

was also at this school, that despite repeated attempts to come back to the school to speak with students, I was unable to gain access to the school again.

3.4.2 Participant Selection and Recruitment

In the case of the elites, the trustees who were interviewed had been part of the Studio Schools movement from the very start and had therefore been involved in the development and evolution of the Studio School model. These trustees were selected for this institutional knowledge, and for the perspective that they had developed alongside it. The Member of Parliament was approached as it was important to build an understanding, from the perspective of the model's supporters in government, why the Studio School model had been positioned in the way that it had.

Once the Studio Schools were recruited, multiple key stakeholders within each were identified for participation in the research. Selection of these participants was designed to provide as many different 'levels' of voices within the Studio School site thereby allowing for a rich narrative to be built. The key 'categories' of participants identified were: Principal (Head of school), members of the senior leadership team, members of staff (with emphasis on specialist, science, and mathematics teachers), school sponsors, employer partners, students from Year 10, and students from Year 12. The reason for choosing students from these two separate year groups is twofold:

1. During the preliminary phase of research (Appendix B) it became obvious that the students joining the Studio Schools at Year 10 and at Year 12 were joining for very different reasons.[43] In order to capture the diversity of lenses through which students

[43] As demonstrated in Appendix B, staff, senior leadership, and parents had stated that students joining Studio Schools in Year 12 were mostly doing so because they were interested in the STEM subjects and in pursuing STEM careers. The population of students who joined in Year 10 were a mix of those who were interested in STEM, and those who were looking to make a fresh start. This is discussed more in detail in Chapter 7 where student voice across the four schools is articulated.

of different ages viewed the role of the Studio Schools, it was important to capture the narratives of both these groups of students.

2. From a more practical perspective, one of the schools that was chosen as a case study site (Studio School DeGrasse) was only in its first year of operation, and so the only cohorts of students I could recruit from were Years 10 and 12. To maintain consistency across the schools in this study, the decision was taken to recruit students from Years 10 and 12 only.

In the initial design of the methods, the goal was to try and recruit at least three individuals from each category of participant; purposeful sampling was employed to identify people who would be able to provide the greatest depth of understanding regarding the STEM specialisms and the choices involved in guiding the school. However, the preliminary phase showed that due to the small and dynamic nature of the individual schools, combined with high turnover of staff and lack of buy-in to elements of the Studio School ethos, this targeted number of participants was not realistic. What also became obvious was that due to the small size of the school, in terms of staff members at least, the same people were responsible for different positions (for example, at Studio School DeGrasse, there were a total of seven staff members who shared responsibility for the various positions at the school). That said, 57 participants were recruited across the four case study sites. Figure 3.1 below provides an overview of the different categories of stakeholder recruited at each school.

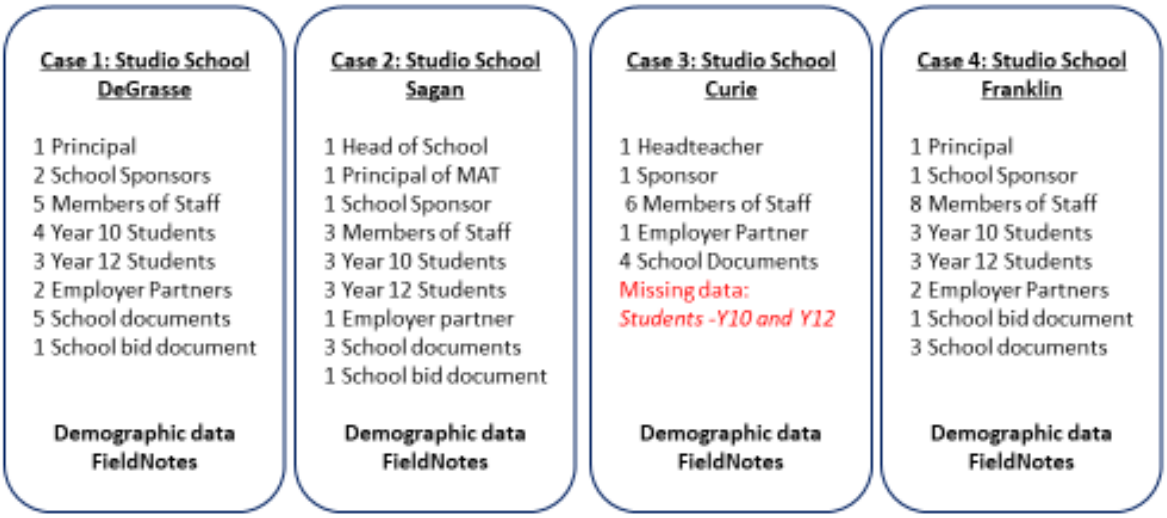


Figure 3.2: Overview of data collected at case study sites.

As indicated above, it is important to note that despite multiple attempts to recruit students at Studio School Curie, this was not possible. However, given that there were three other schools where the criteria for the recruitment of interviewees were the same, data saturation(Guest et al., 2006) was pursued and obtained through the themes generated occurred through analysis. This gave me the confidence that the narrative for the role of the school from the perspective of the students would also hold true for students at Studio School Curie.

3.5 Ethical Considerations

This study has been conducted in accordance with the guidelines from the British Educational Research Association (BERA). CUREC approvals were obtained for the study ahead of commencing the research, institutional approval from each case study site was sought and given, and all participants completed consent forms (in the case of students, consent was obtained from students and parents alike if the student was under the age of 16). Two teachers at different schools did not want their interview to be recorded so detailed notes were taken throughout the interviews in these instances. All interview recordings were stored on a secure server provided by my university, and every effort was

made to anonymise interviewees: every interviewee was assigned a number at a particular institution, and the key log was kept in a password-protected document separate to the transcripts themselves. Pseudonyms have been assigned to each case study site, and interviewees have been anonymously referenced according to typology, for example: DeGrasse Headteacher, and so on. When using information that was publicly available, effort has been made to ensure that it is bounded within information about the school only, and not about persons individually acting for the school, for example only the Twitter accounts for the schools were gleaned for information, rather than individual stakeholders at the schools. Given the unique nature of the Studio Schools and their individualised enactments of the model and STEM policy, anonymising the schools completely proved difficult, however, efforts were made to do so. The guarantee of anonymity at the individual level at least was more important given the policy climate for these schools, and this has been maintained.

3.6 Data Analysis

The process of data analysis is one that begins during data collection, and the two are inexorably intertwined: 'analysis does not begin [only] when the researcher has finished collecting their data, but is an ongoing and inherent part of the qualitative research and should infuse all aspects' (Ritchie et al., 2014, p. 275). In reality, the process of analysis began during fieldwork, and continued into the writing process allowing me the opportunity to understand and interpret the data on an ongoing basis. During the cycle of data collection, themes emerged that were captured in fieldnotes, which were treated as the informal analysis that takes place when in the field. This section however, will focus on the formal analysis that was conducted after 'leaving' the field.

Unlike with quantitative analysis, there is no one-way or agreed set of rules that

govern analysis of qualitative data (Ritchie et al., 2014), providing a degree of freedom that still demands rigour of the researcher. Throughout this process, it was useful to refer to the questions posed by Srivastava and Hopwood (2009, p.78) in their iterative framework for qualitative analysis. These questions served as a guide to keep going back to the research questions as I navigated the volume of data:

- What are the data telling me?;
- What do I want to know?; and
- What is the dialectical relationship between what the data are telling me and what I want to know?

All the data in this dissertation from both the preliminary and main phases were analysed using thematic analysis, and what follows below is an account of the procedural steps that were followed in the two phases of this research.

All interviews were recorded, and then transcribed and coded manually to develop codes and themes (categories). Words or phrases were marked as codes that could essentially 'map' back to the research questions in a manner postulated by Elliott (2018, p.2851). These initial codes were descriptive in nature, which were then organised into more analytical themes relevant to the phase of the research. In both phases of research, coding was initially done by hand, and then the repeated rounds were done using CAQDAS software (NVivo 12) to have easily accessible coding frameworks. Using this software also facilitated ease of handling of the larger volume of data. NVivo 12 was largely used for the electronic management of data, however, the power of the tool to provide numerical analysis has also strengthened the internal generalisability of the data (Maxwell, 2010), when creating a more analytical code.

The process of coding and categorising into themes to create narratives was the same

across both phases, however, the purposes were slightly different, and these have been highlighted in the sections below.

3.6.1 Preliminary Phase

The research conducted in the two Studio Schools in the preliminary phase served three purposes, the most important of which involved the building of themes that could be considered as deductive 'codes' for the analysis of the data collected in the main phase of the research. As a reminder, Figure 3.1 on page 92 provides a summary of the participants and goals of the preliminary phase of the research.

The process of coding in this phase was similar to open coding (Corbin & Strauss, 1990), looking for themes that were dominant in relation to the role of the school, choice of school, choice of STEM qualifications, and understanding the basic elements of the Studio School. The themes that were developed from this research phase and the analysis can be found in Appendix B. These themes served as a starting point for the coding framework that would be generated in the main phase of research, providing the deductive codes that would be used in conjunction with an inductive coding approach (Ritchie et al., 2014, p. 14) for the analysis of data collected in the main phase.

Another important finding to address here (as introduced in Section 3.2) is that the findings from this phase highlighted the importance of a choice of conceptual framework that would allow for an understanding of the implementation and interaction of policies in schools i.e., the policy enactment framework.

3.6.2 Main Phase

Given the diversity of stakeholders identified to help answer the different research questions in this study, it was important to separate the steps of analysis of the main phase of this research.

3.6.2.1 Analysis with the 'elites'

The first set of data to be analysed was the interviews obtained from the original architects of the Studio School model and the key member of parliament involved in its launch. The analysis from this set of data forms the basis of the results presented in Chapter 4. The interviews were coded inductively mapping to the three sub-research questions with particular emphasis on understanding the intended role of the Studio School model, starting with descriptive codes, and then moving upwards into more higher order themes. Document analysis was also carried out at this point on documents provided by the Studio School Trust, as well as on parliamentary documents pertaining to the development and goals of the Studio School model. During this phase, the key texts were used as more than just 'background material'. Silverman (2003) suggested documents required the process of meaning making to be done by the researcher, which meant that it was important to determine who the authors of the documents were, and how the documents may have been influenced by this; the documents were not taken at face value, but were treated much like the collected interview data, and coded both descriptively and conceptually. Thematic analysis was adopted here as well, again using both inductive and deductive approaches (using the codes developed in Phase 1) to coding to understand the intended goals of the Studio School model. The goals of the Studio School model were compared to the national policies and political discourses relevant to the time of the creation of the model to identify which policies might have played a role in the shaping of the school. These identified policies and discourses were then put together to create the policy ensemble for the intended goals of the Studio School model. The coding framework for this policy ensemble can be found in Appendix C. As an example of what the coding framework looks like, an excerpt of the themes pertaining to why the Trustees of the Studio School model believed individual Studio

Schools had chosen STEM specialisms can be found below in Table 3.4.

Table 3.4: This table below is an example of the coding matrix that was created from the analysis of the interview data from the elites and the documentary evidence pertinent to the building of the Studio School model. The first column indicates the Research Question that the generated themes are pertinent towards, the themes in column 2 are based on codes that are in column 3. The last column provides example quotes for the codes and themes.

Pertinent RQ	Theme	Codes	Example Quotes
What key factors influenced Studio Schools to have a STEM specialism?	Concept used as a Tool	Marketability	"We were MUCH less concerned with the idea that these schools would teach STEM, or that they would teach , or have an alignment with social care. But we found, quite early on, that you had to provide a narrative to parents to say this school is different because it will do these things."
		Aspirational	"So some Studio schools went for STEM, they went for engineering, as that was seen by many parents as aspirational."
	Response to National policy – supply side response	Development of Skills for the economy	"It's going to be hard for the UK to compete globally when we don't have this skill set. I think it's more about a sort of skill set rather than saying STEM is god, and that's where we go. Because, you do need this , you need all this - you need the complete package. You need technicans and those with technical qualifications and abilities, but you need the creative, the artistry to put it together, you need the workplace skills. I talked myself into silence" "We support the all of the policy changes for the development of STEM skills. We are absolutely 100% behind that- the economy needs it. There is a skills shortage, a skills gap, something needs to be done."

3.6.2.2 Case Study Analysis

Analysis of the data collected from the four case study sites took place at two different levels. The first level forms the bulk of the within-case analysis; the second level of analysis occurred when analysing across-case. This two-level process allowed for comparison and

contrast of themes across the four cases. As a reminder, the sites, participants and additional data collected that contributed to this analysis can be found in Figure 3.1 on page 92.

Within case analysis

It is important to articulate the actual steps that were taken in the *process* of coding at each case study site, to help build trustworthiness in the analysis that has been presented further on in this thesis. This is particularly important to highlight given that in qualitative research, data collection, analysis, and writeup are often inter-related (Creswell, 2013), and that on occasion the data analysis process can be indistinguishable from actual data (Thorne, 2000; Nowell et al., 2017).

When conducting analysis in the main phase, and as indicated from the data sources in Section 3.3.3, multiple sources of data were collected from each individual case study site. Data analysis was conducted first on a site-by-site basis. The first step in the process was to get familiar with the different sources of data, with a reading and re-reading to truly engage with the information in a detailed manner. This allowed me to truly engage with the data at a deeper level. Following this reading, the different data sources were coded inductively and deductively using codes that had been identified from the literature and preliminary research. Deductive coding was conducted using codes that had been identified from the literature (that related to schools like Studio Schools and the limited literature on Studio Schools themselves, as identified in Chapter 2) and preliminary research (Appendix B). Once this process of coding was completed for one case study site, I moved on to the next case study site and the same process was repeated. If any new codes were identified, they were noted, and then the previous case study site was checked in an iterative manner. This process was repeated for all the case study sites. Themes were generated for each case

study sites by drawing connections between the various codes. These themes were then reviewed across the case study sites to draw further connections, and to identify commonalities and differences.

For each case study site, the interview data were coded both descriptively and analytically treating each stakeholder as a 'policy narrator' (Ball et al., 2012). To generate an understanding of the contributing factors for the choice of STEM specialism in Studio Schools interviews from the Senior Leadership Teams (SLTs) and sponsors were also coded specifically mapping to that research question. Table 3.5 provides an illustration.

Table 3.5: An example of a coding framework from the policy narrators (SLT and sponsors) at Studio School DeGrasse. These codes were used in Chapter 6 to explore the factors that have contributed to Studio Schools choosing to have a STEM specialism. The first column indicates the Research Question that the generated themes are pertinent towards, the themes in column 2 are based on codes that are in column 3. The last column provides example quotes for the codes and themes

RQ	**Theme**	**Code**	Example quotes
What key factors influenced Studio Schools to have a STEM specialism?	Link to Studio School model	Industry Links	There's a great engineering base around X. If you can have an educational level, even if you're only doing general engineering, it gives you a stepping stone into all branches of engineering. If you live locally, motor racing is a natural add-on to that. (Employer)
		Lack of skills	Our overall strategy has developed more acutely as well to be that of a pipeline of talent for business. That's effectively our new mission. We're trying to connect STEM education with high density of STEM businesses (Sponsor) That type of dumbing down products of the system is of no use to these employers that have got skills gaps.(Sponsor)
	Tool	Marketing	My view is probably if you're going to go for a vocational-based education, the STEM subjects are perhaps the

			natural ones to go for to attract the general. If you've started going down, I don't know, the catering industry or art, I'm not sure how easy that would be to sustain a school. (Employer) We had to change because people didn't understand what logistics was and people didn't understand was sustainable construction was, even if you can say it [chuckles]. It was decided it, our marketing manager decided to change it from sustainable construction to engineering and logistics to business because people understand business, sort of. People mostly understand engineering, or not- still don't understand it more so than sustainable construction.
	Engagement	STEM identity	'doing' science and engineering to that of 'being scientists and engineers' (Head of Science)
		Integrated approach to STEM	'Science in schools …needs to be more joined up than [it is] … to give students an understanding of what it means to work in these industries' (Principal) – also links to code on Industry Links
		Community	work with the local community to create this awareness as it was such a 'fundamental part of the way we [as a society] now think and operate' (Principal) The school felt that if by being in the community they were able to get more people (parents and students alike) to engage with the STEM subjects – even if it was just to enhance their basic understanding of

			what STEM means (DeGrasse School Manager)

After this, for each case study site, the interviews from all the different stakeholders were coded to understand the role of the Studio Schools and how the adoption and enactment of a STEM specialism may or may not have influenced the development of this role. All the key stakeholders offered a version of what they believed the role of the Studio School was based on their individual experiences and, therefore, sometimes constructing their own narrative about how the Studio School worked and what it did. Once this coding at the stakeholder level was complete, the codes from the different groups of narrators were compared to create a whole-school narrative for the role of each Studio School. Documentary analysis of artefacts provided by the schools was also conducted to add to the development of these emergent themes at the school level. Individual coding frameworks for each of the schools can be found in Appendix C. Once this process of coding was completed for one case study site, I moved on to the next case study site and the same process was repeated. If any new codes were identified, they were noted, and then the previous case study site was checked for similar themes in an iterative manner. This process was repeated for all the case study sites.

Cross-case analysis

During the cross-case analysis phase, effort was spent to try and build 'abstractions across cases' (Merriam, 1998, p.195). Using the themes established in the within-case analysis, inductive analysis was utilised for pattern matching and theme building across the cases (Yin, 2013). This cross-case pattern matching, and explanation building allows one to 'see processes and outcomes that occur across many cases, to understand how they are qualified

by local conditions, and thus develop more sophisticated descriptions and more powerful explanations' (Miles & Huberman, 1984, p.172). The coding framework for this cross-case analysis can be found in Appendices C and E. This cross-case analysis was approached slightly differently for answering the different research questions. When considering the factors that had contributed to the choice of STEM specialisms of the Studio Schools, and why, in fact, the schools had chosen STEM at all, the interview data for the SLT and sponsors of the school was compared across the four schools to create this understanding. The reason that only this group of stakeholders was considered and not the entire school, is because it was the sponsors and SLT who were responsible for determining the qualifications on offer. When considering the enactment of the Studio School model however, and the role that Studio Schools played in practice, the whole school's narrative was considered (created as described in the section above). This whole school approach helped to give voice to, and provided understanding of how, all the stakeholders have understood and internalised the role of the Studio School not only for themselves, but more widely in English education.

3.7 Rigour

As with all elements of qualitative research, there is no one way to talk about establishing rigour. However, qualitative research is often criticized regarding the assessment of quality in it. By outlining the steps taken during the process of coding of data, an attempt has been made to build trust in the analysis that has been presented in this research. Lincoln and Guba (1985) posited that the trustworthiness of a piece of qualitative research is incredibly important to demonstrate. They established four categories of trustworthiness: credibility, transferability, dependability, and confirmability. Similar to internal validity in quantitative research (the positivist paradigm), the **credibility** for this research was maintained by employing triangulation of multiple sources for the interviews. By interviewing the different

groups of stakeholders, I was able to build confidence in the narrative for the role of the school, as it encapsulated the many voices involved. By using documentary data and statistical information alongside interview data, I was also able to establish credibility for the narrative of the school as per the established guidelines for credibility by Denzin (1978). This 'internal validity' for the research was maintained by the use of pattern matching and explanation building that was employed in the thematic analysis (Yin, 2013). Establishing **transferability** in qualitative research can be more difficult based on the nature of the research that was being conducted. This study was not necessarily conducted in an effort to produce generalizable results in a statistical, post-positivist sense (Yin, 2013); rather the intention was to provide an in-depth understanding of how policies can shape the ever-evolving role of Studio Schools in England, particularly those that chose to embody a STEM-based curriculum. In the following section, I describe the reflexivity I practiced through the course of this research to enable the development of **confirmability** alongside the methods of triangulation I have described above.

3.8 Research Positionality

I am an engineer by training and spent six years working as a chemist. Throughout my career thus far, I have championed and pushed STEM causes, participating in and organising various engagement activities to help raise the status of STEM, and in particular engineering. I am also extremely passionate about increasing diversity in engineering and have worked on numerous school programs to encourage and mentor young girls towards careers in engineering. As such, I felt it was necessary for me to be aware of this inherent bias in my nature. Consequently, when I was interviewing and during analysis, I needed to practice a degree of reflexivity ensuring that I was able to fairly evaluate the programs that Studio Schools have in place, and not just award laurels for the sake of trying to improve the image

of STEM in the market. In addition, during the course of data collection, I found that when I was talking to schools that were STEM based, disclosing that I am an engineer, does in fact open doors to a more frank conversation. It seemed that experiencing a STEM curriculum myself and having a STEM career, I suddenly understood all the roadblocks that programs and coordinators faced when trying to promote the STEM agenda. Reflexivity, once again, had a big part to play here as I needed to make sure that in having these open conversations, I was allowing the participant and data to speak for themselves, rather than imposing my own understanding and views on them. During the course of analysis, I placed similar checks on myself; when reading transcriptions, and creating the descriptive and analytical frameworks, I practiced reflexivity once again to ensure that my interpretation of a particular issue was indeed not clouded by my own biases.

It is equally important to address positionality with reference to the elite interviewees. I had chosen to interview proponent policymakers and leaders of the Studio Schools movement, for their perceived power and influence over the deployment of the Studio School model. During the interview, I was not there to challenge their decisions or interpretation, but rather to hear their perception of how Studio School policy was developed and influenced. The nature of policymaking is such that the people heavily involved move on or shift priorities, and so in effect, the narratives produced are indicative of a reflective exchange between me and the interviewee where the interviewees had to stop to reflect and think back to a particular period of time that would have had an influence on the development of the Studio School model. As Ozga (2011, p. 222) notes, sometimes, 'the receptive audience has enabled a policy maker to think through again and re-present key moments and developments in their working lives'. It needs acknowledging that their roles towards these specific policies were largely positive, but it remains that this

research sought to capture what these elites believed were the intended roles for the Studio School model were and how they had been shaped by key policies and discourse at the time. The elites themselves practiced reflexivity during the interview indeed capturing the compromises that they themselves had to make in the launch of the Studio School model.

3.9 Chapter Summary

This chapter has sought to lay out the research design and the conceptual underpinnings for the analysis of the data that was collected in this study. The rationale for a qualitative approach to understanding the Studio Schools is presented as a means of exploring research questions that were fairly broad. The rationale for a case study design and how the case study sites were chosen based on preliminary research that had been conducted has been explored. I also elucidated the rich variety of sources that served to build not only the contextual understanding of each individual school, but also the analysis itself; documents, artefacts, interviews, demographics and fieldnotes, all served to enrich the understanding in this study. This chapter identifies the gaps in the data collection, and what steps were taken during the phase of analysis to increase and ensure the reliability of the data that were collected. It has also highlighted the approaches that were taken to ensure rigour was maintained during data collection, and also during analysis and write-up of the study.

This chapter also introduced and discussed the use of Ball et al.'s enactment framework (2012) which underpinned the analysis in this study. Inspired by Bathmaker's work (2019), the Studio School model (specifically its intended role in education) is imagined as a policy ensemble which was to be enacted at each individual school. Keeping with Ball's language of enactment, the 'implementation' of STEM specialisms at the individual schools was considered as enactment and the role of these schools was explored using the idea of policy narration by key stakeholders.

Where this chapter has defined the methodological approach deployed in this thesis, the next chapter seeks to understand the starting position of the Studio School model. What was the model intended to be? How was it influenced by the policy discourse and policy changes of the time? The following chapter presents analysis from the architects of the Studio School model, exploring the original role envisioned for the model and why they believed there may have been such a high proliferation of STEM-focused schools across the network of schools. It also presents the policy ensemble for the intended role of the Studio Schools through creating an understanding of different policies that have shaped this role. By juxtaposing this policy ensemble against major policy shifts in English education, the journey to understanding the evolving role of Studio Schools in secondary education is brought to the fore.

CHAPTER 4 - The envisioned role of Studio Schools

This chapter serves three purposes: 1) to understand, from the perspective of the architects of the Studio Schools, the rationale for the high number of Studio Schools with STEM specialisms; 2) to explore and understand the intended role of Studio Schools in education; 3) to understand the policies and policy rhetoric that has shaped this role, thereby creating the policy ensemble for the intended role of Studio Schools. This chapter also provides an insight into how the architects of the model had rationalised and envisioned the role of the schools. This chapter, therefore, provides the starting position to develop an *understanding of the evolving role of Studio Schools* in English education. It also helps address the research question on *What key factors influenced Studio Schools to have a STEM specialism?*

The earliest design and thinking for the Studio School model began in 2006. It has since experienced many alterations in its approval and adoption within government, through its introduction to employers and local communities, and during its navigation of an ever-changing policy landscape. The model was formally launched in 2010, and the key elements that make up a Studio School (introduced in Section 2.1), represent a watered-down version of the original model, which was meant to be truly disruptive in its approach to education (this will be described later in Section 4.1). Despite a move to a more tempered approach, Studio Schools were still meant to be disruptive in the way that they approached secondary education. The model was born into a policy landscape that was shaped by the ideologies of New Labour (1997-2010).[44] It was influenced by and designed to operate in a landscape that was focused on delivering a personalised curriculum to students, a focus on employability, and partnership and cooperation. This was a policy time when 14-19

[44] For an overview of the (relevant to this thesis) policy changes that have shaped education in England over subsequent governments, please see Chapter 2.

education and skills development was at the fore of national policy and a cooperative system intent on delivering diverse academic and vocational qualifications was being encouraged. And yet, the model was officially launched in 2010, by the Coalition government, whose key policies (i.e., the proliferation of market forces) have superseded the very ones that the model was designed to thrive in. As such, the Studio School model has had to pivot and adapt its envisioned role, thereby diluting its original missions, ethos, and hence its sense of branding. The envisioned role of the Studio Schools is shown to be confused, trying to be everything to everyone all at once. This was also accompanied by an advocacy of role that shifted with changing government priorities.

The Studio School model was envisioned as being purposively fluid (see Section 2.1); schools were meant to choose specialisms that aligned with industries and job opportunities in their local communities. However, as discussed in Section 2.1.3, there was no obvious (Cook et al., 2016) direct link between Studio Schools and their local areas (in terms of occupation sectors, local (un)employment rates, and so on). Moreover, for a model that was meant to be diverse in its qualifications offer, over 75% of the Studio Schools open in 2020[45] had a STEM offer (broadly defined). It was therefore important to understand from the perspective of the model's architects what factors contributed to the choice of STEM specialisms across the different schools. From the model's architects' perspective, the ubiquity of STEM specialisms across individual schools was indicative of three things:

a) STEM subjects could be viewed as an aspirational pathway for parents and students alike;

[45] As a reminder, in 2020: Number of open Studio Schools = 24; Number of Studio Schools with a STEM specialism = 19.
In 2016-2017 (when data collection was in progress): Number of Studio Schools = 37; Number of Studio Schools with a STEM specialism = 28.

b) STEM as a concept was an effective marketing tool; and

c) offering a STEM specialism allowed individual schools to respond to and be a part of the national debate on a shortage of STEM skills.

4.1 The evolution of the structure of the Studio School model

The Studio School model has navigated an ever-changing policy landscape and it is now 14 years since the first concept papers were presented to parliament in 2006. Studio Schools were confronted with a choice: either to hold firm to their original mission; or compromise on certain elements to create a viable place in the increasingly complex education landscape and marketplace.[46] This section builds an understanding of the Studio School model as originally envisaged, and how and why that role evolved to the model that was launched in 2010.

Studio Schools had originally been envisioned to function 'simultaneously [as] schools, - providing qualifications and a full range of skills, **and** [emphasis added] businesses providing services directly to customers' (Young Foundation, 2006, p.6). The guiding principles for the Studio Schools were: Entrepreneurialism, Practical Working, Real Business, Broadening Opportunity, Student-centered, and Diversity (ibid, p.13). The model in its original guise was meant to depart from the traditional 'classroom/workshop-based approach to practical learning' (ibid, p.14), and to offer a model where students were meant to learn through a 'full immersion in the world of work' (ibid, p.16). Each Studio School, it was ultimately hoped, (ibid) would host at least one commercially viable business, school cafe and a community business centre, which as standalone enterprises would provide 'self-sustaining and consistently available'(ibid) opportunities for meaningful work experience.

[46] Please see Sections 2.4.2 – 2.4.6 for the policy changes that have led to the creation of a market in English education.

The presence of a business in the school was meant to make the work experience offer more authentic – as students of the school were expected to the contribute to the commercial success of this business, by serving as employees of the business while being students at the same time (ibid, p.18) . The model even went so far as to schedule the 'Studio year' (ibid, p.27) as one that needed to meet the needs of the business, with students making the commitment to work even during what was the traditional academic calendar holiday period. Students were to be paid for the work that they did in the business, right from the age of 14. They were expected to be responsible (alongside more permanent staff in the business) for ensuring the commercial viability of the business, in turn, learning and building their employability skills espoused in the CREATE framework. This framework was meant to sit at the heart of the school (as also indicated by Robson et al., 2018), underpinning all activities and engaged with by teachers, employer partners, and students alike. This model of work experience was meant to be more than the usual offer of work experience or work shadowing that was prevalent in secondary schools; it was designed to be truly immersive. The curricular offer at the school was to be reflective of the needs of the local community and was to link back to the business that was on site, allowing students to constantly couple their learning and qualifications to the work opportunity provided to them.

The design principle that underpinned the Studio Schools' approach to the curriculum was that students would have an individually curated learning programme, which the students were intended to experience through three main strands (Young Foundation, 2006, p.24):

- Real work (made available by the business hosted at the school);
- Work-related projects and work experience within the school and outside; and

- A tutorial group programme that linked subject matter to the specialism and work experience.

Learning was to take place in every situation, with schools mirroring a 'purposeful, dynamic working environment (ibid, p.26); this environment was to develop the idea of the 'expert student', one who could move from patterns of directed study to self-directed work. A range of qualifications (academic and vocational) which ensured that the requirements of the national curriculum were met were meant to be on offer, with students afforded the opportunity to take courses at other schools in the local area if that was indeed what made the most sense.

Even the language used to describe the roles of various staff at the school was one that was more like a business environment (ibid, p.45), with students having a 'line manager' (who would supervise the student's work-related activities day to day), and 'student manager' who would work as a peer mentor; the heads of schools were to be referred to as Director, and even the teaching staff were referred to as Coaches. All the elements of the model were aimed at providing for this self-described immersive experience of the world of work.

And yet, this model in its purest form never came to fruition.[47] In fact, in Studio School documentation from 2009 (three years since the original conception) there was already a significant shift in the structure of the school (in line with what has been presented in Section 2.1.1). Gone was the idea of an enterprise based in the school; instead, a feasibility study for the first set of Studio Schools (Studio Schools Trust, 2009) outlined that

[47] In this study, Studio School Curie comes closest to the proposed structure of an immersive work experience, however, there is no business structure such as the one proposed in the early documentation of the Studio Schools model. Please see Chapter 5 for a description of the activities around work experience in Studio School Curie.

the most viable option for providing work placements was for schools to create partnerships with employers in the local community. However, the curriculum in individual schools was still meant to provide for an integration of work and school and was intended to be delivered entirely via projects. The schools launched in 2010, with six key ingredients listed as essential (as introduced in Section 2.1.1) for a Studio School to be known as a Studio School:

1. small schools where pupils started at age 14;
2. CREATE Framework for developing employability skills;
3. a focus on work placements;
4. project -based learning;
5. innovative staffing structures; and
6. diverse school sponsors.[48]

As outlined in Chapter 2, the Studio School model in its entirety had never had a comprehensive pilot evaluation before full implementation,[49] and the trustees' beliefs and arguments were based entirely on research conducted on the separate elements of the model in different parts of the world (Studio Schools Trust, 2012; van Urk, 2016) and their own personal experience with these different elements.

When discussing this shift in the model's structure and focus with the architects of the model, the theme of compromise rang loud and clear:

> I mean, if one wrote the histories of Studio Schools, the word compromise would feature in a big way. Because, if we hadn't compromised at various

[48] Section 2.1.1 describes the elements of the model in greater detail.
[49] The Studio School concept was put to the test in 2010 in two pilots, in Luton and Huddersfield. Within nine months, an evaluation declared that they were a success; the next four schools had already been approved before the completion of the full school year. (Graham, 2018). The results of the evaluation were never made public (ibid).

> points, you never would have had a Studio School, [let alone] a pure Studio school, as envisaged at the concept. (Studio School Trustee 1)

The trustees were unanimous in their belief that in order to move the model from paper to reality, they had needed to make several compromises to the structure of the school model (as indicated by the quote above), how they outlined the envisioned role of the school, and how they expressed the ethos of the school to different stakeholders that they would engage with, all of which will be considered in later sections of this chapter.

The next section discusses the role that the Studio Schools were intended to play when formed as outlined by the architects of the model.

4.2. The envisioned role of the Studio School

The analysis of documents and interviews from the trustees of the Studio Schools Trust has shown that the intended roles of the Studio School model were as follows:

1) An alternative model of learning to the mainstream model of education.
    i. A model that would help 'reengage the disengaged student'.
    ii. A model that would facilitate a credible choice for parents and students alike.
2) A model that would provide a 'meaningful link to the world of work'.
3) A model that could be a champion of vocational education.

4.2.1 An alternative model of learning

One of the core purposes for the genesis of the Studio School model was to challenge the then-current[50] model of education, as it was one that was 'too academic, too one-size fits-all, and too disconnected from young people's hopes for their own futures' (Studio Schools Trustee 1). The Studio School model was meant to challenge this norm with its offer of an

[50] This refers to the secondary education system in 2006.

alternative, ‘applied, hands-on learning’ (Studio School Trustee 2) approach to curriculum delivery:

> In traditional education, students learn by doing only as bolt-on projects to the curriculum… Standard ways of operating in schools are often at odds with personalisation. (Young Foundation, 2006).

The model had been designed to contest the mechanism of curriculum delivery by espousing project-based learning at its core. As described in Section 4.1, the entire curriculum was to be delivered only through projects that would provide students with real world context of all subject matter. The Studio School curriculum offer was meant to be intensive and aimed to equip students with qualifications that not only met the needs of the National Curriculum but were also valued by employers. The trustees believed the model with its project-based approach was what was needed to provide contextualized and personalised learning to all students, something all three interviewees felt was ‘sorely missing’ (Studio School Trustee 1) from education at that time, and still held true for secondary education ‘today’ (2016) (Studio School Trustees 1,2 and 3). This feeling was echoed by a key supporter in the 2006 New Labour government:

> To have a plurality of choices that enabled learners to have different learning styles according to what works for them, rather than trying to lock everyone into a standardised diet of academic tests of recall at 16 and then hope that they can find something within the narrow specialisation of A Levels. (Ex-Member of Parliament).

From the perspective of its designers, creating an entirely new, alternative model of schooling, was to serve two purposes:

1) to reengage the disengaged student with education; and
2) to create meaningful choice for students and parents alike by establishing the model as delivered via a standalone new institutional form, rather than as an add-on program within the existing models of education and institutional settings.

4.2.1.1 A model to reengage with the 'disengaged' student

One of the roles that the architects of the model had envisioned for Studio Schools was that of a personalised education as a mechanism to reengage with 'large number(s) of students who were being left behind' (Studio School Trustee 1). They felt this personalisation was key to reengaging those students who felt demotivated and/or let down by the traditional, more academic model of education and pedagogy and who were classified as 'disengaged from school but not from education' (Stamou et al., 2014):

> It was about improving young people's life chances. A group of young people who weren't doing particularly well in the current education system. You know, we're not talking about less intelligent pupils, or badly-behaved people, just people who don't/ hadn't reacted particularly well to the way that there were being taught. (Studio School Trustee 1)

The trustees all shared the understanding that the Studio School model was developed for those students for whom school was just not working; and this belief was reflected in the documents provided by the Studio School Trust as well (Young Foundation, 2006; Studio Schools Trust, 2010). The trustees believed that this role was important not only in 2006, but also very much relevant for more recent times (2016), and that Studio Schools could serve as a 'home' (Studio School Trustee 3) for these students. They felt that the 'restrictive curriculum offer' (Studio School Trustee 2) that was being delivered in schools[51] in a very specific 'academically-oriented manner' (Studio School Trustee 1) targeted only a specific type of student, thereby leaving behind, possibly even excluding, many other students:

> This model was never intended for everyone. But it was clear that a substantial minority of pupils were likely to thrive better in such an environment than in traditional schools. (Studio Schools Trust, 2016b, p.1)

The original intention had been that Studio Schools were to provide these disengaged students with the opportunities and atmosphere to thrive, showing them that there were

[51] It is key to note that the Trustees felt that the traditional academic settings had not really moved forward, and this description of a restrictive offer held as true in 2016 as it did in 2006.

alternative avenues available for attaining qualifications and skills that differed from the regular classroom-based model with which they had become disenchanted:

> It is an emancipatory model for young people to discover how learning can be more than what they've experienced to date. (Studio School Trustee 3)

This model was not just meant to help those who were disengaged from school at a superficial level; the model's architects truly believed the combination of small school environment, personal coaching, real-world experiences and personalised project-based learning would help even those students who were most at risk of becoming NEET (Young Foundation, 2006; Studio Schools Trust, 2012a, 2012b):[52]

> The Studio School model in its purest form may shift some of the long - term difficulties certain types of learners have had in accessing a very limited curriculum…. I actually think Studio Schools are a practical way in which that can be addressed. (Studio School Trustee 3)

This alternative to mainstream education was framed very much within the context of providing a credible choice to parents and students, something that will be discussed in the next section.

4.2.1.2 Credible choice in a collaborative system of 14-19 education

Whilst the original architects and trustees believed that the pedagogical underpinnings and coaching elements of the Studio School model could help tackle and even end disengagement from education, they were more ambitious. They believed the different elements of the model had a broader appeal, and whilst not for everyone, served as a credible alternative to mainstream secondary schools for a wide range of both parents and students alike. This provision of a credible, alternative choice was one that was supported by the New Labour government at the time (2005-2010):

> To have more than one provider of that offer was always going to be healthy for that system. Each would be slightly different… be able to learn

[52] NEET = Not in Education, Employment, or Training.

> from each other… end up with significant number of students to have the choice. (Ex-Member of Parliament)

Studio Schools were to be entirely new, standalone alternative institutions so that 'young people, whatever ability should have a choice, an opportunity to do things that they like and are interested in…. that [the young person is] on a path that suits [them], and that path shouldn't be a once in a lifetime decision' (Studio school Trustee 2). The schools were not envisioned as a program within another pre-existing institution:

> The Trust was partly in the business of institutional creation- we wanted to sell schools; we didn't want this to be [just] an interesting project. (Studio School Trustee 1)

Initially however, this new type of school was meant to function within a collaborative system of education that had been envisioned for a brief moment in policymaking [53] through their participation in 14-19 Partnerships in local authorities (Young Foundation, 2006; Studio Schools Trust, 2009). This framing of collaborative choice will be discussed in further detail in Section 4.3 in relation to building the policy ensemble for the role of the Studio School model. For now, it is important to emphasise that Studio Schools were designed to play a major part in building the success of the Increased Flexibility Programme (Young Foundation, 2006) by participating in the intended 14-19 Partnerships; a key part of an envisioned collaborative system of institutions (see Section 2.4.2):

> The local 14-19 partnerships will provide Studio School students with the widest possible range of enrichment opportunities as well as opportunities to undertake qualifications - vocational and academic - not offered at the Studio School. Students seeking to take GCSEs beyond those offered at the Studio School will be able do so through a neighbouring secondary school or sixth form. Those wishing to explore a different vocation can study for an NVQ at a local FE college. (Young Foundation 2006, p.5)

[53] See Sections 2.4.2, 2,4.3 and 2.4.6 for greater detail on this emphasis in collaboration between schools.

This partnership allowed for schools, colleges and independent training providers to work together to provide the 'right' choice for students, creating a large, coherent 14-19 framework of institutions and community partnerships, arguably functioning like an ecosystem (Finegold, 1999; Grainger & Spours, 2018) for the development of skills. Yet, as demonstrated in Chapter 2, this vision for a system did not last long, the implications of which will also be discussed later in this chapter.

4.2.2 A meaningful link to the world of work

All four interviewees (Three trustees and one Ex-Member of Parliament) believed that one of the most important roles for the Studio School model was to equip young people with the skills that would make them more employable (Studio School Trustee 3), tackling what they felt was the lack of emphasis placed on the needs of young peoples' paths into work:

> ….because employers had been telling us that in addition to those literacy and numeracy skills they also need young people entering the labour market who are digitally competent, who can communicate and collaborate and turn up on time and understand work place cultures and be more than just people who are really good at gaming exams. (Ex-Member of Parliament)

The Studio School trustees felt that existing secondary education had failed to provide students with the skills that they felt employers were demanding from young people entering the world of work (Studio Schools Trustee 1). There was also recognition amongst the Trustees that while one could 'argue the precise definition of employability skills' (Studio School Trustee 1), these were skills that the architects of the model had aimed to develop through the Studio School's CREATE framework and the various other elements of the Studio School model (Studio Schools Trust, 2009). These skills are what would make young people more employable, and the trustees emphasised that promoting the development of these skills helped to set Studio Schools apart from the current (circa 2006/07) secondary curriculum on offer:

> The intention behind the [referring to a specific Studio School] school was to afford young people an opportunity to broaden their horizons in relation to the possibilities that work has to offer - to enable a broader vocabulary of employment opportunities. (Studio School Trustee 3)

With existing secondary education overly focused on entry into higher education, no longer providing students with the information, the training, or the opportunities of work experience that needed to become more 'employable' (Studio School Trustee 2), the architects' intent of restoring 'that connection between education and work' (Studio School Trustee 1), was aligned with supporters in parliament at the time of inception (Ex-Member of Parliament);

> Typical secondary schools weren't doing anything like enough to provide young people with these skills, largely because it wasn't something that they were required to do. (Studio Schools Trust, 2016b)

This failure to place enough emphasis on work experience, which the proponents of Studio Schools believed was needed to allow young people to be more comfortable with the world of work and the 'adult world' (Studio School Trustee 2) was perceived as a major weakness and one the Studio Schools aimed to address.

4.2.3 A champion of vocational education

In setting themselves up as a credible alternative school choice that provided a path to the world of work and equipped young people with employability skills, Studio Schools Trustees intended these institutions to also be a credible choice that would bridge the worlds of secondary schools and FE. This was an objective echoed by their supporters in New Labour who were keen to push and blur the boundaries between vocational and academic subjects at the time:

> That the learning was then more closely aligned to the relevance of the workplace and to some sense of vocations whilst still unambiguously wanting to achieve good academic performance. (Ex-Member of Parliament)

Indeed, the Studio Schools were intentionally positioned as part of the schools rather than the FE sector. One of the reasons for this was to challenge parents 'conservatism with a small c' (Studio School Trustee 1) notions of vocational education. The idea being if vocational qualifications could be pursued as part of the choice of offerings in schools, they would be more widely accepted. Paradoxically, in distancing themselves from FE, and not taking advantage of economies of scale and the expertise that exists within FE, the Studio Schools found themselves at odds with the sector. In addition, two further purposes need to be considered here. The first is the promotion of technical and vocational qualifications as aspirational routes. Studio Schools sought to challenge the 'binary division(s), academic-good, vocational/practical – bad' (Studio Schools Trustee 2). The schools were meant to achieve this by building clear pathways into higher education or work, and by ensuring that employers were heavily involved in the activities of the school to provide high quality, meaningful work experience. This purpose was also espoused by the model's government support, who were keen to bring to the model to life as it would ensure a 'core offer relevant to the workplace but still aspirational' (Ex-Member of Parliament).

The second was the desire for the Studio School institutions to be the model of schooling that would bridge academic and vocational learning:

> We want to create a very high-quality route, which mixes academic and vocational study as appropriate, leading to qualifications valued by employers and universities and therefore an attractive choice for young people. (Studio School Trustee 1)

Studio Schools were always meant to teach the subjects that were specified in the National Curriculum, supplemented by vocational qualifications and an employability skills framework (CREATE) inculcating a 'holistic education' (Studio School Trustee 3) for young people.

The architects of the model highlighted (building on the idea of compromise in section 4.1) that the way in which the above-described roles were emphasised or communicated changed with different stakeholders, be it policymakers or parents and students in the local communities:

> I think initially, it was about, initially it was probably heavily leaning towards pedagogy, you know the project-based element. But, as time went on, it became about, for us, it became more about the labour market- how you make young people employable? (Studio School Trustee 2)

When speaking with policymakers, for example, the emphasis for the new schools was placed more heavily on the link to work to differentiate Studio Schools from other secondary offers available at the time:

> I mean it's clear to me that we would never [have won] an argument with government on the basis of pedagogy, you had to name a labour market solution rather than an education solution, I think that's been the key. (Studio School Trustee 1)

When speaking with parents, the narrative shifted to emphasize the pastoral nature of the school and relinquishing the vocational ideals somewhat, particularly focusing on the idea that this model would help students reengage with their education. The trustees reflected on the problematic nature of creating and maintaining a combined aspirational academic and vocational ethos for parents, whilst being a school that could serve as a fruitful pathway for the 'disengaged student'. Therefore, having vocational themes that were aspirational was 'incredibly important' (Studio School Trustee 1) for new schools to appeal to parents and to 'afford young people [the] opportunity to broaden their horizons' (Studio School Trustee 3). It was here that a tension arose. While one of the missions of the model was to aid those students who had not flourished in their current schooling system, careful crafting and deployment was needed; using words such as 'disengaged' (Studio School Trustee 1) was not in the schools' best interest as it signalled to parents and teachers alike that Studio Schools

were only for those students who were ‘badly behaved’ or ‘not very bright’ (Studio School Trustee 1) reinforcing the vocational education narrative (touched on in Section 2.4.5.1); that the trustees felt that was ‘manipulated into appearing to be for the children that weren’t capable’ (Studio School Trustee 2). So, whilst the original mission of the Studio School model had included tackling the ‘twin challenges of disengagement and skills shortages’ (Studio Schools Trust, 2012a), the trustees were reflective in their recognition how hard it was in reality for individual schools to maintain this.

This section identified the intended roles of the Studio School model and has highlighted the rationale for the development of those roles. The next section seeks to understand which policies and policy discourse contributed to the development of those roles, that is the policy ensemble for the role of the Studio Schools. It is important to do so because it is critical to understand what policy ideas contributed to the development of these roles. Studio Schools and their envisioned roles, while unchanged, have had to navigate an ever-changing policy landscape, a journey that will be discussed in the conclusion of this chapter.

4.3 Creating the policy ensemble for the intended role of the Studio School

The Studio School model was envisioned to play many roles in education (as per the previous section), creating a set of fundamental tensions. To a certain extent these roles and the objectives they were meant to deliver were in some ways incommensurable with one another. The very fact that the architects of the model shifted position on the roles of the model presented to different people is an indicator of the opposing choices and priorities they faced in developing and launching it. The model, while a home for disengaged students, was also to be a credible choice for all students, including those of high ability. It was to raise the reputation for vocational qualifications and bridge the academic/vocational

divide. Moreover, forming the missing link to work and preparing students for the world of work; this was a model that was meant to be all things to all people. In other words, the Studio School model was from the outset, extremely ambitious and multifaceted, always under stress and neither entirely coherent nor cohesive as a result.

Given the competing discourses and multi-faceted objectives for the Studio School model, it is important to identify which key policy 'ideas' shaped and drove these intended roles. The Studio Schools (and its embodied national policies) have, since launch, had to navigate a fast changing, complex policy landscape, making it important to understand which policies it had originally responded to. What is presented below is a discussion of the policy ideas and discourses that the Studio School model brought together when originally envisioned. This section does not detail the policy history of English education (please see Section 2.4 for this) but rather highlights the various policies that the Studio Schools responded to and were supported by.[54]

The architects of the Studio School model had wished for Studio Schools to be viewed as a challenge to the norm of curriculum delivery in secondary education to re-engage with those students who felt disenfranchised by the then current provision of education (see Section 4.2.1). This was to be accomplished by the distinctive approach to the curriculum via the creation of a unique personalised curriculum (see Section 2.1 for a description of the CREATE framework and the role of Personal Coaches) which complemented it. By purposefully choosing to emphasise pastoral care (through personal coaching and a personalised curriculum) in the model, the Studio Schools initiative could be seen to be responding to the vision set out in *Every Child Matters* (Department for Children, Schools

[54] Similar to Chapter 2, what counts as 'policy' is difficult to define (Hill, 2013). What has been presented here is a selection of government Acts and reports and debates in Parliament that contributed to the policy discourse forming the Studio School policy ensemble.

and Families, 2003, p.28). The Department for Education and Skills (2005a) further backed this vision, as in its White Paper *14-19 Education and Skills* it laid out proposals that included the identification of, and intervention with, those students struggling with engagement in secondary schools by providing opportunities to enjoy new styles of learning, opportunities to learn in different settings, and to have more opportunities for applied and practical learning. The emphasis was on finding innovative ways of keeping young people in education and training through an individualised learning pathway that worked for them.

The New Labour government through its White Paper *14-19 Education and Skills* (Department for Education and Skills, 2005a) had tried to design a cohesive 14-19 pathway for students including, but not limited to the development of a system of institutions providing coherent pathways for young people to take the qualifications of most value to them, while maintaining the 'gold standards of the GCSEs and A levels'.[55] Studio Schools had been designed for (Young Foundation, 2006) and developed in this policy atmosphere. The 14-19 Partnerships[56] had meant to facilitate the creation of this system, and Studio Schools were envisioned as functioning as a part of this coherent system of institutions (Young Foundation, 2006; Studio Schools Trust, 2009) within the local authority it was set up in. This was the kind of collaborative system of school choice advocated for by government as part of the 2005 White Paper *Higher Standards, Better Schools for All. More choice for parents and pupils* (Department for Education and Skills, 2005b).

[55] The 14-19 White Paper on Education and Skills has been widely criticised (Hodgson & Spours, 2008, for example), with concerns that it would reinforce the snobbery towards work-related education through an emphasis, yet again, on the distinctions between the vocations and the academic. In this White Paper, A levels and GCSEs were once again considered the gold standard of qualifications. Where the New Labour government had had the chance to make a truly coherent 14-19 system, they failed to meet the recommendations set by the Tomlinson Report and had 'cherry picked' (ibid) what they wanted from the Tomlinson Report (2004).

[56] 14-19 Partnerships were meant to be partnerships between schools, FE, employers, volunteer organisations, community members to play a strategic role in developing and helping to deliver the 14-19 education vision in local communities.

In so far as governments across the world have tried to close the gap between education and work through enterprise and entrepreneurship education in schools, colleges, and universities (Coiffait et al., 2012), the deployment of enterprise education has been varied and patchy in England (McLarty et al., 2010; Young, 2014). The Davies Report (2002) made clear recommendations to government for an overarching framework of enterprise education that could be used to build employability skills in young people. In 2004, the New Labour government had made work-related learning a statutory requirement (Department for Education & Skills, 2005a) in the school curriculum and earmarked £55 million for enterprise education initiatives in schools. This, they believed, would allow young people to build their employability skills through work experience within the proposed 14-19 framework (ibid), an idea also espoused by the architects of the Studio School model:

> Studio Schools pioneer a bold new approach to learning involving enterprise projects and real work. This roots students' learning in the real world and helps them to develop the skills they need to succeed. (Studio Schools Trust,2010)

The Studio Schools responded to the vision laid out by both the Davies Review and that what was put forth in the 14-19 White Paper on Education and Skills (2005a). The development of employability skills was a core part of the Studio Skills model, delivered through work experience linked with appropriate qualifications for students, and the use of the CREATE framework. Employability comprises many different components, and the development of 'enterprise' capability, and economic and business understanding that the Studio Schools wished to inculcate in their students (Young Foundation, 2006; Studio Schools Trust, 2012) were similar to those categories that were identified by the Davies Review (2002). The CREATE framework defined a set of skills that aimed to enable students to be more work ready, but also provided a methodology for students, and professionals working

with those students, to track the development of these skills. Its development was a direct response to the recommendations that were laid out in the Davies Review (Young Foundation, 2006). The goal of providing students with 'transferable skills' that enabled consideration of multiple careers through their lifetime was also reflective of the pre-2010 Labour government's policy on 'replacing the redundant notion of a 'job for life' with [their] new ambition of 'employability for life' (Department for Education and Skills, 2005a).

By seeking to combine academic and vocational study within a coherent pathway, the Studio School model attempted to embody the ethos of the Tomlinson Report (2004). The schools aimed to raise the status of vocational education and training and were proponents of the vocational Diplomas proposed as a part of the report (Young Foundation, 2006). The Diplomas were considered to be a mechanism (Tomlinson, 2004) by which student disengagement could be tackled (a core Studio School role) allowing young people to select from a range of vocational and academic qualifications that would have relevant 'currency' with employers (ibid, p.13), and were meant to provide a mechanism by means of which the status of vocational training could be raised. This same ethos was also partly reflected in the *14-19 Education and Skills* White Paper (Department for Education and Skills ,2005a), which the Studio Schools model seemed to draw from the most. The White Paper attempted to support the view that vocational qualifications needed to be given more credibility and an aspirational feel, pushing the envelope on the curriculum offerings that 14-plus students were given. Studio Schools were espousing all of these ideals in the framing of their structure and goals:

> We intend that young people will have real choice from the age of 14. Between 14 and 16, whatever choices they make, they should experience a broad curriculum which prepares them well for future life and learning. Whichever route they take, they will not narrow down their options – and will be able to make a further choice about how to continue in learning. By

> the age of 19, young people will have had the opportunity to pursue academic qualifications; qualifications in a broad vocational area; or occupationally-specific qualifications in the work context. Whichever way they choose to become qualified, the qualifications they achieve will have real currency. (Department for Education and Skills, 2005a)

Studio schools offered a choice to students that was not only different from other secondary school offers in terms of pedagogy and pastoral care, but also provided a choice to students at a different age. By starting at the age of 14, the model aimed to create greater institutional choice at a younger age (i.e., before the move at age 16 to the upper secondary phase) and aspired to create a coherent progression pathway that joined up the two later years of the lower secondary phase with the upper-secondary phase in a way that would then allow students to jump into either higher education or the world of work (Studio Schools Trust, 2010). The trustees argued for a pathway that began at 14, as '14-19 was the right age to have a big employment focus. And, because we wanted to create a more adult atmosphere in the schools' (Studio School Trustee 1). Importantly, creating a pathway that spanned qualifications at both Level 2 and Level 3 and attempted to create a credible and robust link to work, embodied the spirit of the 14-19 White Paper (Department for Education and Skills, 2005a, p.25); it took away the artificial break point of 16, something that that the New Labour government at the time (2006-2010) was keen to do:

> I would probably reflect now that we should have gone further… getting rid of any kind of artificial points at 16. At the same time we wanted to raise the participation age to 18… there was something significant going on. We developed the diploma programme as 14-19 qualifications that allowed you to go all through without the punctuation mark of a whole load of GCSEs so this fitted well within that concept. (Ex-Member of Parliament)

It is worth reiterating that even though the 14-19 Green Paper (2002) and the White Paper from 2005 called for a 14-19 pathway (and had its support in government), it still positioned GCSEs at 16 as the gold standard that parents recognized, setting up from the very start a barrier that Studio Schools would never be able to overcome.

It was clear the Studio school policy ensemble, developed for its intended goals, was one that was very much rooted in a specific 'policy time'. Policy changes tended to outpace implementation, and Studio Schools were now working in a policy context that was very different to the discourse that shaped their role. Whereas the intended roles of the model may not have changed, the emphasis that policymakers placed on them and the policy focus of the education landscape changed. The implications of this will be considered in Section 4.6.

4.4 Why STEM?

Given the high prevalence of STEM-focused Studio Schools despite the intended fluidity of the model, it is important to understand why so many schools chose to have a STEM focus and qualifications as the headline theme for the school. Studio Schools were meant to be fairly 'broad church' (Studio School Trustee 2), in that the model was designed to provide skills to students, both employability and technical, in a range of different sectors and occupations, and would be relevant to the local community they were set up in:

> Britain is for its size, a very, very diverse country, and has very diverse labour market. And what the labour market looks like in Newcastle is different from Hull, and different from Manchester, and different from London, and different from wherever. So, if you're going to have a model that's capable of being operated in all of those different areas, it's got to be flexible- it's got to respond to local needs. (Studio School Trustee 1)

The architects highlighted that there was a general skills shortage in the country that extended beyond shortages specifically in the STEM fields, and by making a conscious, deliberate decision to not align itself with one particular skills or sectoral agenda, the Studio School model would be able to tackle this breadth of skills shortages. The trustees also highlighted that STEM skills were not the 'be all and end all' (Studio School Trustee 2), and there was a pressing need to focus on making young people ready for jobs in all sectors,

which was another reason why they had actively chosen to not have a central alignment to any one sectoral theme:

> We were much less concerned with the idea that these schools would teach STEM, …or that they would have an alignment with social care. (Studio School Trustee 1)

However, the trustees recognised that many Studio schools had gravitated toward offering specialisms classed under the broad umbrella of STEM. While the trustees emphasized that in those scenarios where a STEM qualification focus fitted the needs of the local labour market, those Studio Schools were in fact just fulfilling the goals and staying true to the ethos of the Studio School model (Studio School Trustee 1), they also recognized why individual Studio Schools more broadly would adopt a STEM theme:

1) STEM subjects could be viewed as an aspirational pathway for parents and students alike;
2) STEM as a concept was an effective marketing tool; and
3) offering a STEM specialism allowed individual schools to respond to and be a part of the national debate on a shortage of STEM skills.

The trustees also emphasized that despite this unplanned, intense level of focus on a STEM agenda, there remained an emphasis (from the perspective of the Trust) on specialism choices that were driven by the needs of the local communities and their labour markets only:

> I don't perceive a map across the country of specialisms that the trust is determining. They are very much determined by the local school where they are set up. (Studio School Trustee 3)

4.4.1 STEM as an aspirational pathway

The creators of the Studio School model were cognizant of the emphasis on the development of employability skills, the advocacy of vocational qualifications that came

with the Studio School model, and how the model might be considered as 'non-aspirational' (Studio School Trustee 2) by some parents and students in their local communities. The architects of the model were also aware that the idea of 'learning by doing' held enough of a 'stigma' that meant that young people and their parents might never consider a vocational route as a viable choice (Young Foundation, 2006). Knowing this, and wanting to attract not just the 'at risk' but also the 'high-flying' students (Studio Schools Trust, 2012a), the architects of the model provided advice to the individual schools in their network that, in order to combat this stigma, the work placements, the employer contacts, the projects, and even the industrial themes chosen for the school needed to have an aspirational feel to them (ibid). The trustees highlighted that one of the reasons that so many schools may have picked a STEM-focused theme was because they felt that STEM qualifications were viewed by parents as being aspirational qualifications, thereby enabling a successful narrative for the schools (Studio School Trustee 1). One of the trustees also pointed out that for those Studio Schools which were set up in those localities 'characterized as being areas of low aspiration', where STEM did not necessarily make sense for the local work offer (Studio School Trustee 3), having a STEM offer enabled schools to provide an opportunity to not only broaden students 'vocabulary of employment opportunities', but also be a part of their ongoing 'exposure to aspiration' (Studio School Trustee 3). Therefore, these schools were using STEM qualifications and pathways to create a sense of aspiration that did not exist, and pathways into employment or higher education that the local communities that they were in may not have had access to before.

4.4.2 STEM as a marketing tool

For a new school looking to carve out its place in the local community, a STEM-focused specialism with an aspirational feel, and ability to showcase diverse job prospects, provided

Studio Schools with a potentially effective marketing and recruitment tool. The trustees suggested that STEM themes allowed individual schools and sponsors to demonstrate pathways to more lucrative employment for students by pointing to the changing nature of industries and jobs (for example, increased automation).

> We found, quite early on, that you had to provide a narrative to parents to say this school is different because it will do these things. And actually, a big part of that narrative was about employment - convincing them that their children would be …able to leave school and go down a credible employment path. (Studio School Trustee 1)

In addition, the trustees pointed to having a STEM specialism such as games design, that was just 'cool for some students' (Studio School Trustee 3), thereby serving as an efficient recruiting tool for the schools with both parents and young people:

4.4.3 STEM as a response to National Policy

Given the government-sustained narrative[57] and media rhetoric surrounding STEM and national skills shortages, the Studio School trustees pointed out that it was understandable why many Studio Schools may have chosen a STEM specialism. They highlighted that Studio Schools may have felt that choosing a STEM-focused specialism served a larger purpose by responding to either a regional or national skills shortage conversation on STEM skills:

> the alignment of that work with what is a national skills shortage, a local and a regional skills shortage is encouraging from the point of view of providers. We are collectively responding to that need (Studio School Trustee 3)

One of the trustees pointed out that new Studio Schools may have considered these STEM specialisms in the context of a belief on their part that they would be equipping young people with the skills needed to contribute to the economic prosperity of the country (Studio School Trustee 2). This sentiment aligns with the ethos of the envisioned Studio

[57] See Section 2.4.1 for the history of and continued focus and emphasis on the development of STEM skills in England.

School model which was to foster 'the skills needed for young people to succeed in an increasingly changing and globalised economy' (Young Foundation, 2006). Two of the trustees felt there was a misalignment in the development of this STEM skills supply at other institutions; there was a lack of a 'marriage of theoretical knowledge with the applying and understanding [of] that[knowledge]' (Studio School Trustee 2). The trustees believed that the perceived skills need in the labour markets that came from this mismatch of theory and application in the STEM fields would be better filled with those students who had 'a more complete package of skills' (Studio School Trustee 1) developed through the Studio School model of project-based learning, work experience, and an emphasis on employability skills. In essence, the trustees felt that the Studio Schools and the model of learning were a sensible response to meet national policies on skills needs.

This section built upon the arguments from the trustees' perspective as to the potential rationale for the high percentage of Studio Schools with a STEM-specific offering. Chapter 6 will explore this reasoning from the perspective of the schools in order to reconcile how the model survived and thrived (in some cases) in today's education landscape. The next section explores and builds an understanding of the policy landscape that the Studio's schools policy ensemble navigated.

4.5 How do the trustees feel Studio Schools have done?

While the model was designed to be flexible (discussed in Sections 2.1 and 4.4) it is this very flexibility that made it difficult for the architects of the model to create a clear and unique identity that solely belonged to it. The trustees recognized that just as they re-framed and repositioned the Studio School model with policymakers and communities (see the latter half of Section 4.2.3), individual schools would likely have to do the same to gain traction for themselves in their local communities.

While the Studio Schools movement had initially been designed as schools entering into a cooperative system (see Section 4.2), the trustees spoke of how existing schools in these areas offered more pushback than support (Studio School Trustee 3). Local schools were described as 'very hostile' in some instances, and the trustees felt that the Studio School model was challenged due to the external forces of a 'very big hostile market' (Studio School Trustee 1). Moreover, local schools had hampered recruiting, only allowing Studio Schools to speak with only a handful of students. In addition, Studio Schools had not been part of the advice and guidance information, to the point of fabrication, that local councils sent out to parents about schools in the area:

> The more disappointing side of the [Studio] school being established has been the response of the local schools. And an opposition which has been quite vociferous and has really acted in ways that have not supported the best interests of the school, and arguably, the area more broadly. (Studio School Trustee 3 describing the experiences of one Studio School)

The very differences that made the model unique were the ones that were the hardest to maintain. From trying to offer vocational qualifications that were useful for employers and still meet the needs of school performance league tables (Studio School Trustee 2), and while trying to deliver work experience, and teach the curriculum through project-based learning while trying to meet accountability measures, necessitated a difficult balancing act, and the trustees admitted that not all schools had quite achieved that balance. As one trustee pointed out,

> [Studio] Schools are under massive pressure to behave like (other) schools, and if you institute a different program, or an element to the schools- first of all, there is a change of leadership, a program gets converted to other things. (Studio School Trustee 1)

Maintaining the Studio School model in as true a form as possible took a great deal of leadership and belief to remain resistant to some of the external forces that have been described above:

> And what we talked about at the end of the last academic year was actually re-casting the original intention of the school, because it was my view… that there has been some drift from its original missions…. Really the school reverted into the mainstream maintained ways. (Studio School Trustee 3 speaking about one Studio School)

Those Studio Schools that were the most successful were the ones whose leaders had demonstrated the 'courage' (Studio School Trustee 2) to stay as true as possible to the original concept, whereas others suffered when they tried to behave like any other mainstream secondary, faced with a difficult cohort and low resources.

4.6 A model that is all things to all people in an ever- changing policy landscape

> …change happens far too often and too casually. New legislation replaces old; organisations are founded and abolished; policies are launched and relaunched; programmes are created and abandoned – all at an alarming rate. (Institute for Government, 2017)

From the very beginning the Studio School model has been shown to be compromised (as demonstrated in Section 4.2). A model whose narrative for some people was focused on employability skills, whereas for others was about providing a second chance for those students who were disengaged from school, and still further for some it was viewed as an aspirational path into a particular segment of the labour market. So far as the messiness of the Studio School model has been brought to the forefront, it is evident that the different ways in which its roles have been adapted and emphasised in an ever-changing policy landscape has led to a point where its true purpose and envisioned role seems to have become even more confused or even lost.

Even the way government has viewed the role of Studio Schools has shifted over the years. For example, for New Labour, the Studio School model's re-engagement role was the one that was championed. In their White Paper, *Back on track: a strategy for modernising alternative provision for young people* (Department for Children, Schools and Families,

2008b), they endorsed Studio Schools as part of a 'spectrum of alternative provision available to a local authority in addition to its Pupil Referral Units'(ibid, p.52). The New Labour government at the time (2005 – 2010) viewed Studio Schools as inappropriate for those already in Pupil Referral units but recommended them as an alternative choice for those students who were just not engaged by the traditional academic curriculum (ibid, p. 52).Government therefore viewed the model as one that could serve as a halfway house for those students that did not need all the resources that were provided in a Pupil Referral Unit, but still more than what was available through the mainstream curriculum to enable them to re-engage with education in a meaningful manner. And yet, this very advocacy as a means of reengagement is one that was questioned considering the policy changes to do with a more restrictive curriculum (HLDeb, 5 May 2011 col 569). It is also obvious from the interviewed policymaker's words that there existed an awareness that if a Studio School was to function almost like a Pupil Referral Unit, it would struggle from the perspective of economies of scale and its ability to attract the right level of resources needed for those students.

> There have been problems with local secondary schools only recommending Studio Schools to students with a behavioural problem or achievement problems and they're going to damage the secondary schools' placing in the league tables so if they can offload them onto another institution that's really helpful. So, if the Studio School ends up feeling a little bit like a pupil referral unit, it's going to really struggle. (Ex-Member of Parliament)

This endorsed role of re-engagement shifted in the eyes of policymakers as a new government came into power in 2010. Under the Coalition government, the emphasis moved towards the Studio School model's role in being an institution central to the development of vocational and technical skills for the economy (Department for Education and Rt Hon Michael Gove, 2012):

> Indeed, the application process to set up new free schools, university technical colleges and studio schools in 2013 and beyond has already been announced. I want particularly to urge groups to submit applications to set up new schools … where skills shortages are particularly evident. (Gove, 2012)

This has been further emphasised more recently, with Studio Schools and UTCs being heralded as key providers of technical skills, along with other free school models in the 2016 White Paper *Educational Excellence Everywhere.*

Vocational education and training provision in England, however, has a confused outlook and structure of provision due to the plethora of policies that have been rolled out,[58] which meant that individual schools trying to enact Studio School model have needed to navigate a landscape of policy that in recent times has shifted away from a 14-19 emphasis and blended approach to academic and vocational learning, to the roll out of T-levels for a more widely-supported post-16 model (Department for Education, 2019), a boosted apprenticeship policy (HM Revenue & Customs, 2016) , and an ever-tightening funding mechanism for both schools and FE colleges (Keep, 2018).[59] There is a lack of clarity on how all the elements of the new policies relate to one another, and this has created a confused picture for Studio Schools and UTCs alike, particularly in the pre-16 phase, which is where their recruitment has thus far occurred.

It is also key to note the way school choice is viewed and functioned, has changed from the time the model was developed. In 2010, the election of the Coalition government brought with it an increased focus on academisation (HM Government, 2010), and a diminished focus on 14-19 partnerships, including a stronger emphasis on creating more choice for students and parents. All schools were allowed to become academies, rather than

[58] Please see section 2.4.5.1 for a detailed account of these changes.
[59] Please see section 2.4.5 for a detailed account of these changes.

just those that had been failing, setting up a competitive market for pupils and therefore funding. As outlined in the Coalition Government's School Framework (Department for Education, 2013), Studio Schools were considered an important part of the spectrum of institutions supported in the government's agenda of creating more choice for students and parents alike. However, it is important to remember, as noted in Section 4.2.1.2, that the model of Studio Schools had been envisioned as part of a larger network of institutions working together, not as a free-standing institution that would be competing with other larger, pre-existing schools for funding, resources and a finite number of 14–19-year-olds within local authorities. The interviewees intimated there needed to be coordination between the then open Studio Schools and government to assess the need for Studio Schools to operate as part of a rich landscape of options for students – that the aim needed to be one where providers of 14-19 education worked with one another on a local basis, possibly with a sharing of resources, rather than a 'conflicting mishmash of options that doesn't really serve the greater good' (Studio School Trustee 3). Studio School Trustee 2 admitted that while they believed in the need for choice, the high 'fragmentation of education' was something that could get confusing for students and parents alike, as they themselves 'struggled with it' (Studio School Trustee 2) on occasion:

> The imperfections of the market - you either trust a market or you don't, and personally I'm a planner rather than a free marketeer, and I would like to sit down across an area and say look, there is the opportunity, we want to do this, where are the gaps, how can this add to what goes on? (Studio School Trustee 3)

Also, important to note, is that the government's emphasis on enterprise education has shifted. The statutory requirement for work experience was removed in 2012, thereby effectively weakening the government's demand on schools to engage in enterprise education and build employability skills. Yet, at the same time increased support for the

development of employability skills through enterprise projects has occurred at the tertiary level of education as evidenced by the White Paper, *The Plan for Growth* (2011) and the Higher Education White Paper (2011). These key policy papers identified the key role that tertiary education institutions played in providing enterprise and entrepreneurship education. Whilst this was something that the Studio Schools were already trying to do at the secondary school level, it was not something that was necessarily endorsed by the landscape of secondary education policy.

4.7 Chapter Summary

This chapter has sought to understand the intended role of the Studio Schools and to ascertain the influence of key policies and discourses on the development of not only the model but the role itself. The architects of the Studio School model offered their understanding of the intended role of the model and the rationale for it. The Studio School model is demonstrated to be not only one that tried to be all things to all people, but one that was marketed differently by its architects, and was also advocated for differently by policymakers. What this chapter has also sought to emphasise is that even though the envisioned role for the Studio Schools hasn't changed, the policies that shaped it have moved on. Not only have government priorities changed, but the way the role of the Studio Schools was emphasised and advocated for changed as well.

In trying to ascertain what role STEM-Studio Schools might be delivering, it is clear that each Studio School may end up playing a different role [or all roles] depending on which element of the model they choose to enact more strongly within their own school ethos and local education marketplace. By choosing to adopt and bring to life a STEM-focused specialism within the messiness that was the Studio School policy ensemble, within the further layer of messiness imposed by the education policy landscape, the question then

arises - is the role that these Studio Schools are trying to play one that distanced itself from the Studio School model/movement (or at least one aspect of it), or does it embrace it? As the schools have shifted and adapted in the context of an ever-changing policy discourse (as evidenced above), which policies were actually shaping the role of the Studio Schools in practice given that the policies that had shaped it no longer existed in their original form? Are these schools using an aspirational curriculum to rebuild a disengaged community of young people, or is their aim to provide a skills pipeline for a STEM workforce? Do these two objectives have to be in conflict? Have individual Studio Schools, in defining a role fit for their individual community and local labour market setting lost their identity as a Studio School or have they as one Trustee put it, 're-cast its brand or reinvigorated its brand' (Studio School Trustee 3)? These are the types of questions that will be explored in the next chapters building on the perspectives and narratives of the different stakeholders involved in the Studio Schools.

Chapter 5, which follows next, focuses what the Studio Schools in this research look like in reality. It provides an account of the journey that the four schools selected for this study have taken, bring to life their specialisms, and the Studio School model itself within the context of their local realities.

CHAPTER 5 – The reality of STEM Studio Schools

This chapter focuses on building the contextual understanding that encapsulates 'the situated, professional, material and external dimensions' (see Section 3.2.1 and Ball et al., 2012, p.21) of the Studio Schools in this study.[60] As discussed in Chapter 3, it is important to build this contextual understanding of the schools and their local community because 'policies [and their enactment] are intimately shaped and influenced by school specific factors, even though in much … research, these sorts of constraints, pressures and enablers of policy enactments tend to be neglected' (Braun et al,, 2011, p.585). As alluded to in Section 3.2.1, Studio Schools can be considered as 'superficially similar' (Braun et al., p.587) with key ingredients (Section 2.1.1) that were meant to make a school a Studio Schools. And yet, as Chapter 4 demonstrated, there was an explicit fluidity that was built into the structure and deployment of the Studio Schools, making it all the more important to understand how these individual schools had adapted to their local contexts and if they were still able to look and function like Studio Schools. Moreover, assuming that the interpretation and translation[61] of the Studio School model, as well as that of the STEM specialisms, was uniform would be to ignore a school's 'situated necessities' (ibid., p. 586). This includes (but is not limited to) understanding the history of the community the school might be in, the physical space that it occupies, and even the realities of external pressures such as local competition. Where the previous chapter focused on understanding the intended roles that Studio Schools were meant to play (and creating the policy ensemble), this chapter explores the realities of the ways in which the schools have been able to

[60] See Section 3.2 for a more detailed overview of the policy enactment framework that has been used in this thesis.
[61] See Section 3.2 to understand how the acts of interpretation and translation are what move policy implementation to policy enactment.

implement the features of the model itself, particularly the different ways in which schools have chosen to bring to life their chosen STEM specialisms. Some of the Studio Schools have the specialism fully embedded in the identity of the school, whereas others are on a journey of understanding how they would like to see both their specialism and the Studio School model itself and why – even questioning if they were indeed providing the right qualifications for their students. As this thesis is interested in building an understanding on the choice of these specialisms and how they may have influenced the schools' role in education, it is important to build an understanding of the different ways their chosen specialisms are a part of the schools.

The four schools in this study were working within the contexts of their local communities, the Multi Academy Trusts (MATs) to which they belonged,[62] everchanging education policy, and the wider education market. Post-launch of the Studio Schools, as the Coalition government (2010 - 2015) sought to increase centralised control for the varied types of schools,[63] by mid-2015, the preferred model of governance for individual schools became as part of a multi-academy trust. This move to a MAT model meant that Studio Schools were no longer free-standing institutions that were just part of a loose network of Studio Schools; they were to become more intrinsically tied to a set of other schools (not necessarily Studio Schools) within a MAT that they were brought into or within which they were created. Insofar as the Studio Schools were to be part of a collaborative 'system' of education, the schools in this study found themselves functioning in a mini system which was their MAT, not necessarily within the wider network of Studio Schools or even the

[62]As introduced in Section 2.4.2, MATs are part of the sweeping changes related to school autonomy and increased accountability for secondary schools in England by the Coalition government (2010 -2015). As a reminder, MATs are chains of schools (usually academy status) that are out of Local Authority control.
[63] Please see Section 2.4.2 for more detail.

schools in their local communities. While not always a collaborative relationship, the Studio Schools were able to take advantage of shared MAT resources such as payroll, and other back office activities, and shared students and teachers across the different schools in the MAT. In effect, this means that the Studio Schools were at least in some ways providing the personalised curriculum that the architects had envisioned for the model (revisited in more detail in Chapter 7). The shared resource structure also provided the means by which the Studio Schools in this study were able to stay financially viable. By working in partnership within their MAT/ local institutions the schools were also able to adopt a co-operative approach to the delivery of education as envisioned in the original model. That said, this cooperative relationship was sometimes fraught, as will be demonstrated in this chapter.

What is also highlighted in this chapter is that the STEM-focused Studio Schools in this study had experienced recruitment issues such as competition from local schools, and from within their MATs and even a lack of guidance provided to parents and students (as described by the trustees in Section 4.5 as well). This is discussed in greater detail at the end of this chapter.

Of the four schools in this study, no one Studio School was the same although they did all have the key elements of the Studio School model in one form or the other. While it was indeed the intention of the Studio School Trust to allow for free-flowing development around some core ingredients (see Sections 2.1.1 and 4.1), it is important to note that none of the Studio Schools in this study had managed to entirely incorporate all elements of the Studio School model (something that the architects of the model were cognizant of; see Section 4.5). Importantly though, each school had attempted to embody the overall ethos of the Studio School model when they first opened. For varying reasons, discussed in more detail in the sections below, the schools subsequently found themselves in the position of

being unable to implement or sustain one element of the model or another. For example, Studio School Franklin was able to provide a model of Personal Coaches for pastoral care; in Studio School DeGrasse, however, a lack of funding prevented this from occurring. For Studio School Curie, the deployment of the CREATE framework was entirely superseded by a framework that was common to the MAT, whereas Studio School Sagan had embodied the employability skills framework into the ethos of all its activities.

This disparity in enactment of the model not only brings into question what role the Studio Schools were actually playing in practice, but also raises questions about how the Studio Schools maintained their identity as a Studio School when they struggled to embed the whole model into their practice and operations.

5.1 Studio School Degrasse – Sustainable Construction and Logistics (Engineering)

Studio School Degrasse was located in a historic market town, which was one of the fastest growing towns in England (County profile, 2016a).[64] Largely urban, this town had a population of 35,300 (ONS mid-2016 estimates) and a slightly higher proportion of 0-15-year-olds (20%) than the county (18%) it was located in. According to the Indices of Deprivation, the town had two areas that were ranked within the 50% most deprived areas nationally and were also within the highest 10% of most deprived on the Educations, Skills and Training domain of the Index of Multiple Deprivation (IMD, 2015a).[65] The town had a slightly higher proportion of White residents (93%) compared to the county at 90%. The

[64] For all four schools, town country and IMD data has been used that was pertinent to those areas. These have not been included in the reference list to protect confidentiality. They are referenced here to show the population information was relevant to the time of data collection.

[65] The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation in England (Ministry of Housing, Communities, & Local Government) and is part of a suite of outputs that form the Indices of Deprivation. The 2015 measures have been used, as the data was collected in 2016, and therefore relevant for the analysis. There has been an update with the publication of the Indices in 2019, however this has not been reflected here.

largest employment sector in the area is Retail, followed by Manufacturing, Health and Social Work, and Education. The town also showed a relative degree of strength in the logistics sector (13% of total employment) and formed a part of the garden city movement[66] (strategic investments were made by the Local Authority to create an Eco Town[67]), both of which were important for the theme adopted by the Studio School. Twenty-six percent of the working age population held Level 4+ qualifications (compared to the country at 29% (ONS,2014)) with the next biggest group being those with no qualifications (17%).

At the time of data collection, Studio School DeGrasse was in its first year of operation. There were three secondary schools in the area (including Studio School Degrasse). Part of a seven-school large Multi-Academy Trust (MAT) which included four UTCs, and the secondary school next door, the Studio School was housed in a new, purpose-built building, made from sustainable construction material – a deliberate move in line with the specialisms chosen for the school. The school had wide open (indoor) spaces for students to work in teams on different projects and build collaboration (as envisioned by the school). These spaces also provided students with the opportunity to study or work on a project outside the confines of the classroom. The school had a specialist engineering space with access to 3-D printers, and laser cutters, but was still missing other basic, key equipment such as Bunsen burners for the chemistry laboratory, which the school was renting from different sources (i.e., the local FE college). Construction of the new school building was not completed in time for the school opening, with parents and students

[66] The Garden City movement is a particular focus for urban planning that was introduced in the United Kingdom by Sir Ebenezer Howard. Planning is purposefully done to create self-contained communities that were surrounded by greenbelts. For more information, please see: https://www.theguardian.com/artanddesign/architecture-design-blog/2014/mar/17/ebbsfleet-garden-city-george-osborne .

[67] The Eco town initiative aims to provide its residents with a sustainable lifestyle, from zero carbon homes, to rainwater harvesting systems, with forty percent of the area being allocated to green space.

coming to visit the school in its various states of construction; in some cases, making it hard for them to envision what the new school would look like (Degrasse Staff 1). In 2016 (year of data collection), the school had planned on having 40 places for Year 10, and 70 places for Year 12 (a total of 110 places); however, the subscriptions were **overall** lower than expected at 43 Year 10s (slightly higher than anticipated), and 43 Year 12s (significantly lower than expected). This left the school undersubscribed as a whole at 86 students in its first year.

The school hours were 9AM to 5PM Monday to Friday (mimicking the traditional workday at an office), and two days of the school week were allotted for project-based learning and work experience with employers. The projects were run by the teachers and occasionally employers and focused on weaving elements of the curriculum through them. Towards the end of the school day, students were allotted 'independent learning' time blocks in which they could receive extra help from teachers, undertake their homework, or work on one of their projects. This time was meant to be self-directed, instilling in students a sense of independence and responsibility with regards to schoolwork (DeGrasse Principal).

The Studio School was located next to its sister school in the MAT, and while their estates did not form a single campus, the two schools did share a sports ground. When initial planning had taken place for Studio School DeGrasse, the two schools were supposed to follow a highly integrated, shared resources model for 'utilities, dining, teaching or learning' (DeGrasse Sponsor 2). However, this model never came to fruition, from both a practical perspective (non-matching timetables leading to unavailability of staff, inability of dining facilities to be provided at required times, etc) (DeGrasse Sponsor 2) and a lack of impetus from the existing school to invest in such a shared resources model. The leaders of Studio School DeGrasse felt that this was driven by the fear that the opening of a new school, and subsequent shared model, would result in a loss in student numbers at the

existing MAT school (DeGrasse Principal). Once Studio School DeGrasse opened its doors, though, students were able to take advantage of the courses on offer at the sister school if they wanted to study an option that was not on offer at DeGrasse itself; in effect setting up a local 'system' to offer a personalised curriculum for students. For example, if a student in Key Stage 4 or 5 wanted to study geography they could go next door to the sister school thereby setting up a personalised curriculum through the cooperation of the two institutions;[68] the very model that had been envisioned in the early documentation of the Studio School movement. This relationship of competition and cooperation with the sister school was one highlighted by all key stakeholders interviewed for this case study. The MAT sponsors spoke very strongly to the point that the only way a small institution like a Studio School could survive from a funding perspective was if all the back-office support such as Human Resources, payroll, and marketing could be provided from a centralized source (in this case the MAT itself). The Studio School's sponsors, and Principal also emphasised that despite the extra funding they were set to receive from the Department for Education as a specialist school, managing all the other aspects of finance would have been unviable in the small school scenario without the resources available through the larger MAT.

Given the school was in its infancy, there had yet to be implementation of the CREATE framework and model of personal coaching that they desired for the students at the school. This was in part driven by the fact that the core staff at the school had focused on getting other elements of the model correct quickly (DeGrasse Principal), but leaders also cited the fact that there was not enough funding available to hire an entirely seperate pastoral staff that would be able to work with students on their journeys of skills

[68] As presented in Chapter 4, this was one of the ways the Studio Schools shaped themselves into a credible choice for their local communities.

development. Students at the Studio School engaged briefly with the employability skills framework in a very superficial manner, but the school leaders recognised that there would be a need to focus on it more deeply, as it was one of the defining features that had set it apart for parents in their local community.

The sponsors of the Studio School were an Education Trust whose provision included secondary, further and higher education, apprenticeships and workforce training, consultancy, international education, and learning companies (Sponsor website, 2017). The sponsors were proponents of the 14-19 model of education, viewing Studio Schools and University Technical Colleges as interchangeable vehicles (DeGrasse Sponsor2) to provide a technical STEM offer enabling them to fill perceived skills needs in the locations where they were operating. In the case of Studio School DeGrasse, the sponsors felt that for the population size of the town (and consequently the number of 14-year-olds who would need a school place), the Studio school model seemed a better fit than a University Technical College (DeGrasse Sponsor 1). The sponsors articulated that most of the employers they had spoken with had asked for very specific STEM qualifications, alongside the development of employability skills. However, given they were small or medium sized enterprises in a growing town, there was only so much support they were able to provide the school to help develop those very skills being asked for.

Despite having been open for six months at the time of this data collection, this 'new' Studio School had already experienced some of the issues of institutional identity that longer established Studio Schools had reported (as evidenced in Section 2.1.3 and from the perspective of the trustees in Section 4.5). The Senior Leadership Team (SLT) at Studio School DeGrasse recognized that they needed to maintain a strong belief in the Studio

School model and its ethos to prevent model drift. This was particularly evident in the flux of specialism and qualification choices, described in the next section.

5.1.1 Specialisms and Qualifications offered

Studio School DeGrasse was a self- described STEM and business Studio School. Despite only having been open for a few months, the qualifications and headline focus of the school were already in a state of flux. When originally set up, it was meant to deliver its theme and desired skillset through qualifications relating to sustainable construction and logistics. However, before the school was even able to open their doors to students, the sponsors and senior leaders changed the qualification to a BTEC in engineering for a multitude of reasons, which will be further elucidated in Chapter 6.

The leaders, despite changing its qualification offer, were choosing to showcase the school as a STEM school rather than under the banner of the chosen themes for the school (sustainable construction and logistics) or even as a business-focused Studio School. As such, in the School's opening year, students in Key Stage 4 (KS4) were expected to study English, maths, and combined science as the core with the option to be chosen from Triple Science, Computer Science, Product Design, and Engineering as part of the school's STEM offer. In Key Stage 5 (KS5) students were given the opportunity to choose from Physics, Biology, Chemistry, Geography, Maths, Computing, and a Level 3 Engineering BTEC as part of the focus on STEM.

Leadership and staff also, perhaps confusingly, expressed a desire to be known as a Science, Technology, Engineering, Arts, and Mathematics (STEAM) school as they were in the process of integrating the creative arts with the STEM subjects via the projects that students worked on through the year. However, while the school wanted to position itself as a STEAM school in the area, most of the focus in the first six months in terms of project-

based learning had been on developing projects that were based on the business qualification and had been led by the business teacher, rather than on growing this integration of the arts with their STEM specialisms.

The school also had better links with employers who were not necessarily STEM based; the school, despite having had assurances from STEM employers in the area about involvement had a hard time engaging them in a meaningful manner. That said, at the time of data collection, the school had just set up a work experience program for its students with the engineering division of a large car manufacturing company, which would provide interested students the opportunity to work one day a week for six months with this company.

5.2 Studio School Curie – Biosciences and Electronic Engineering

Studio School Curie was in a town in a unitary authority; an authority that was in the 20% least deprived districts/unitary authorities in England (Unitary Authority, 2017). This unitary authority had a population of 187,751 (ONS population estimates, 2017), and had experienced increased migration from within the United Kingdom since 2012. The town itself had a significantly smaller population at 5,620 (Census, 2011), which had remained stable over the years (Town profile, 2015). Ninety-seven percent of the population in the town was white, of which 73% identify as English only (Census, 2011). Twenty-four percent of the population held no educational qualification, with Level 2 qualifications being the second largest group at 18%. This area has an industrial heritage and was once at the centre of one of the most industrialised parts of the United Kingdom. The town had been settled since the Iron Age and was traditionally dependent on the coalmines for its major economic activity; while by the early 20th century railway carriage making, leather working, and printing were also important subsidiary activities. Since the 1980s the local economy had

experienced change in the shape of de-industrialisation, and at the time of research, the largest employment sector was Retail, followed by Manufacturing, and Health and Social care.

Within the unitary authority, there were six secondary schools (including the Studio School), all of which also had 16 to 18 provision. The unitary authority was bordered by an area that operated a middle school system,[69] so the schools in this wider area were familiar with and more used to school transitions being made by students at the age of 14. This was an important factor that should have worked in the Studio School's favour given that the other Studio Schools in this study, and in the wider network, were beleaguered in their recruitment efforts due to the atypical break in schooling that was created by students moving to a Studio School at the age of 14.[70] However, the Studio School Curie suffered the same recruiting issues as other Studio Schools, something that will be discussed later in this section.

Studio School Curie was housed in a purpose-built building on a campus shared with another school as part of a larger Multi Academy Trust (MAT). This large, sprawling space was also home to a public sports centre. The Studio School's leadership's relationship with its 'mother' (Curie Principal) school on the same campus was one of contentious symbiosis:

> A coexistence is both the only reason that the school exists, and the greatest threat, really, because on the one hand, the school needs to have its unique identity. On the other hand, it's never going to be able to develop on its own - it's never going to be able to thrive without the support of the mother school and its services. So that's quite difficult. (Curie Principal)

[69] Middle school systems are rare in England; whilst in their heyday, there were 107 (National Middle Schools Foundation, 2019) middle schools operating across the country, the system mostly ended with the introduction of the National Curriculum in 1988. For more information, please see: https://middleschools.org.uk/current-uk-middle-schools/ .

[70] See Section 2.1.3 for an overview of the issues that have beleaguered the Studio School model.

The constant reference of the mother school in relation to the school next door (rather than a sister school), as in the case of the other Studio Schools in this study, was interesting. It was indicative of a relationship described by the staff at the Studio School as imbalanced, with leadership and staff at the Studio School left feeling beholden to the resources and help provided by the other school.

The Studio School was housed in a very modern building with wide open spaces, and classrooms that were open plan. Studio School Curie opened in 2015, but the building work for the Studio School was only completed in 2017; staff and students had moved into the building only two days prior to data collection for this research (a key reason why recruitment and access proved so difficult). For its first two years, students and staff of Studio School Curie had been co-located on the site of the mother school, which meant not only sharing resources and back-office help, but also physical space. The Principal and staff cited tensions amongst the students and parents alike over this shared space. The staff highlighted that it was particularly difficult for students as they were unable to feel part of nor partake in a school identity that did not feel entirely their own. Staff had also been unable to conduct a lot of its bespoke activities in the manner that had been marketed to parents and students; for example, leadership had not been able to implement the longer days as intended, nor had it been able to deliver the curriculum through projects to the extent that the senior leaders would have liked. That said, there were elements of the model that had been implemented even before the move, for example, a Coaching model had been put in place for all students to help them identify and develop skills (academic, employability or personal). Despite the challenge of managing timetabling and student population while situated at the mother school, staff at Studio School Curie had developed vertical tutor groups (mixed age, developing coaching and mentoring skills for the older

students) in an effort to simulate what a real work environment might be like (different abilities, different ages, different experience).

The school, at the end of this second year was still not operating at full capacity, with 195 students on roll but with space for up to 300. The dependence on the mother school also extended to the 'front of house' such that students from the Studio School were still taught subjects such as History at the mother school while recruitment of teachers was still in progress at the time of data collection. Another key source of considerable friction (from the perspective of leaders and staff at the Studio School) between the two schools was that Studio School Curie was almost entirely dependent on internal recruitment of students from the mother school to fill its roll, something that the senior leadership team was hoping to change in the next academic year:

> So, the fact that we haven't any kids largely, I mean we have some external recruitment, but very little. The key reason we have, children here, and 195 of them, is that it's effectively been offered as a pathway that year 9 going into 10, or- and then an offer effectively from 11 into 12. (Curie Principal)

At the time of data collection, Studio School Curie had just started to put in place plans for the implementation of other elements of the Studio School model, such as the use of the CREATE framework to help students be aware of and develop employability skills. Senior leaders were also keen to highlight that the school would be embedding enquiry-based learning at the heart of all their student projects which were rooted in real-world external commissions; the partnerships they had created with employers were such that the students were not 'playing at being in the real world' (Curie Staff 1), they were actually running real projects in the business world. For example, students were running genetic analysis for laboratories in a different country and were involved in designing the next generation of electrical appliances for another company.

Studio School Curie is in a unitary authority that still has some areas that operate a middle school system. However, despite being in a unitary authority that was used to transitions at 14 and besides, and despite reporting having a large catchment area the school still suffered from the same hurdles in recruitment at 14 as other Studio Schools. The Principal cited similar reasons as those covered in press reports concerning the lack of recruitment in Studio Schools nationally, [71] but also highlighted the unique challenges that the school faced. The Principal suggested that the school had struggled to recruit a diverse student population, in part due to the vocational offer, and in part due to the location of the school itself (located in a small town in a rural area with a sparse population meant that the school had only limited numbers of secondary school age children that it could draw from):

> This being rural, the number of schools per acre is smaller than if you're in a city. Where are we going to be pulling from, when you can't do it in year 9 and you can't do it in year 7. You're going to get kids who feel vulnerable and let down by their current school, which isn't necessarily exactly what you want. It brings you back to the USPs, what we're offering …. (Curie Principal)

The Principal also highlighted that being so closely linked to and more importantly, dependent on, the mother school and MAT meant that the reputation of the Studio School rested to a considerable extent on the reputation of the MAT, which in its previous year had received a low OFSTED rating of 'Requires Improvement'. In turn, this had made it more difficult for the Studio School to recruit students from the surrounding area.

5.2.1 Specialisms and Qualifications offered

Studio School Curie was an all-STEM school, with qualifications and specialisms geared to fall under the schools' specialised themes of Electronic Engineering and Biosciences. These specialised themes were driven by two of the key sponsors of the school: a large, British

[71] See Chapter 2 for a detailed account of the journalistic reporting of the problems that have beleaguered the Studio Schools model.

technology company that was particularly keen for an emphasis on technology and design in schools hence the focus on Electronic Engineering; the emphasis on Bioscience came from a previously existing relationship that one of the teachers in the school held with a large botanical garden. This Studio School was unique in having sponsorship from such diverse entities, and in holding key partnerships with universities; a model thus far employed only by University Technical Colleges. This school had the backing of three universities that provided support (in the form of project-based learning and work experience activities) in the context of the bioscience and technology teaching and research that was being carried out in the school.

At KS4 (at the time of data collection), the core subjects that students were expected to study included English Language, English Literature, Mathematics, Science (Synergy) or Triple Science (Physics, Chemistry & Biology). Students were expected to choose three specialist optional subjects from a list which included: STEM BTEC, Design Technology, Engineering, Business Studies BTEC, Computing and ICT. A further range of subjects was also available to students by taking advantage of the full offer of courses in place at the mother school. In effect, this created the envisioned partnership from the original Studio School model, albeit within a contentious relationship. In KS5, staff at the school aimed to provide students with a more personalised programme by spreading options across the two schools in a targeted manner. The offer at Studio School Curie was designed to be an 'applied' route, whereas at its mother school, related academic routes were provided as options to students (see Table 5.1).

Table 5.1: Split of Specialized STEM offer at Studio School Curie vs its mother school on the same campus

	Applied Route (Curie)	**Related Academic Routes (Curie's mother school)**

Science	Applied Science	Biology, Chemistry A Levels
Technology	Creative Digital Media Production ICT (BTEC) Games Development (BTEC)	Art &Design A Level Media A Level
Engineering	Design Engineering A Level	Physics A Level
Maths	Core Maths A Level	Pure and Further Maths A Level

In addition, KS5 students at Studio School Curie could complete Extended Project qualifications as part of their curriculum.[72] The projects and the work towards the qualifications were neatly integrated with other courses and work opportunities at the school through the links curated by the employer sponsors or university collaborators. These collaborative and integrated (curriculum and project) partnerships and projects were a testament to how much the school leadership valued the core tenets of the Studio School model and had worked to ensure that the world of work and school were blended as much as possible.

One example of how tightly integrated the employers were with the Studio School was a project based on plant genetics. Students worked with the world's leading experts on plant genetics and carried out original research based around the propagation of orchids from seeds, cultivation of those orchids in a school greenhouse, and then sale of those seeds around the United Kingdom (Curie school website). Participant pupils were not treated as students but as scientists as they analysed genetics results, made discoveries, and collaborated with other scientists around the world. The genetics laboratory space was

[72] The Extended Project qualification allowed students to work on a self-directed and self-motivated project. This was a qualification that was instituted under New Labour.

equipped with high tech microscopes, cutting edge PCR[73] and thermal cycling machines to enable 'academic vocational learning' (Curie Head of Science) in the biosciences (specifically genetics) from as early as Year 10. The work carried out in the projects in this laboratory also supplied larger national projects at major botanical gardens across the country.

In addition, the school possessed a bespoke makerspace[74] which was equipped with 3-D printers and video conferencing technology to allow students to take part in virtual 24-hour 'makeathons'[75] with schools across the globe, working together to create innovative solutions to solve problems set for them by the Studio School's employer partners. The technology and electrical engineering specialisms were further brought to life not only via qualification choice but also through projects that integrated well with the strong emphasis on genetics and biosciences. For example, whereas some students became involved with Research and Development via the production of cell cultures and species selection for growth, others may have gotten involved in developing and manufacturing observation sensors for monitoring the growth of these different species. As aforementioned the main sponsor of the school was a design and technology company, and so students were provided with the opportunity to work on projects that were set by them, for example, creating new designs for electrical appliances. Students engaged in work experience days and weeks at the company headquarters which were in the region.

[73] PCR: Polymerase Chain Reaction machine is a laboratory apparatus used to amplify DNA sequences in the study of genetics. This is typically a process that is taught at the undergraduate level of study, indicating that the Studio School was pushing its students out of the confines of the curriculum to make them more university or work ready.

[74] Makerspace: A physical location where people gather to co-create, share resources and knowledge, work on projects, network and build (Department for Digital, Culture, Media & Sport, 2018).

[75] Makeathons: A Makeathon has a focus on the process of making things and solving problems together. The emphasis is on the collaborative process, rather than the end results (Department for Digital, Culture, Media & Sport, 2018). In the School, it was used to inspire students to use their skills to create a solution to help reduce the effects of pollution in their school, for example.

5.3 Studio School Sagan – Space (Satellites and Space applications)

Studio School Sagan had its home in an historic market town, located in an area classed as significantly rural (ONS, 2011). With a population of 31,090 (ONS estimates, 2017), this town was in a district that had experienced a 73% increase in residents from outside the United Kingdom (District profile, 2017). The town had a higher proportion than average of young people aged 0-15 (Town Statistics, 2017), and had some of the most deprived areas of the county. The town had four areas that were ranked within the 20% most deprived areas nationally, and six areas of the town were within the 10% most deprived on Education, Skills and Training (County Profile, 2017). Twenty-five percent of the working age population had no qualifications compared to 15% percent (ONS, 2014) across England – this represented the largest group of the population at the time; however, 20% of the population held Level 4+ qualifications. The largest employment sector in the area was Retail, followed by Manufacturing with Health and Social work representing the third largest employment sector.

The Studio School was located on a large, open, leafy 'campus' that it shared with its sister school as part of a larger MAT. The school had its own building where all classes took place, however, there was movement across the campus such that teachers come from the sister school to the Studio School site for certain classes and some students moved over to the other school's space. The whole campus had a Principal, with both schools having their own individual Heads of School. In 2017, the school was still severely undersubscribed (100 students across KS4 and KS5, whereas the school was supposed to be full at 300 students) despite having been open for three years. The sponsors and senior leadership of Studio School Sagan were keen to highlight that the biggest challenge for this Studio School was educating parents about the transition at Year 10. Clearly communicating the ethos of the

school meant making clear that it was ‘not just for the naughty kids’ (Sagan Campus Principal) and this had proved problematic given that it was still a relatively a new school with no established reputation. Indeed, the schools’ reputation of being for the ‘naughty kids’ was one that senior leaders felt they had earned due to (what they saw as) unfair practices that other secondary schools had been deploying. The senior leaders and sponsors were particularly vocal with regard to the challenges they faced in recruiting students from other schools, citing difficulties such as only being ‘allowed’ to speak to specific groups of Year 9s or Year 10s at other schools and a lack of marketing and advertising support from local councils as well:

> They put a whole load of new UTCs and Studio Schools on that letter, including some in X-shire which are miles away from Y-shire. They didn't put us and we found out about it because one of our members of staff got the letter because they live in Y-shire. We contacted them and said, "Well, hang on a minute. That's quite exclusive really." (Sagan Principal)

The school had experienced high staff turnover in the three years since opening, with three Heads of School already. The fourth Head of School (interviewed during this research) had been brought in from the sister school to provide more stable leadership (Sagan Principal). Senior leaders also highlighted that it was only with the arrival of the new Campus Principal in 2016 that the Studio School moved to a more symbiotic rather than antagonistic relationship with its sister school on the shared campus. The teachers and leadership in the sister school had, for example, regarded school Sagan as competition, consistently poaching the ‘best students in Mathematics and Science’ (Sagan Sponsor) from their school. The new Principal had worked hard to make the two schools feel like a more unified campus, with more planned and deliberate movement of teachers and back-office resources between the schools. Students were also given the opportunity to take courses across the two schools, creating in effect, the shared system that the original model had envisioned. The Head of

School for Sagan expressed appreciation for the existence of a campus as Studio School Sagan could take advantage of the back-office resources that the sister school (which was much larger) had the provision for. As a small school with limited resources, leaders said it was ‘a relief to not have to worry about Finance or HR’ (Sagan Head of School), something that would have been untenable had the school been trying to survive on its own.

The school had also struggled with its reputation locally as parents had been promised a package of a small, inclusive school with an enhanced focus on STEM, something that they had struggled to maintain the quality of until recently. Due to the lack of strong leadership, the school had found itself functioning almost like an ‘alternative provision of sorts’ (Sagan Principal) attracting lower-performing students who were told by their schools that it would be good for them to leave their existing secondary schools and go to the Studio School, and those students who just did not quite fit into their mainstream environment. This in turn, had contributed to the recruitment woes School Sagan had experienced:

> It was in a little bit of a muddle, I've used the expression a bit of a country club, so people like coming here, they all got on well. It was all very nice. In terms of standards and academic expectations, and rigor, that was lacking. What was going to happen was that the students were going to underachieve. They would have had a nice time, but they weren't going to come out with what they needed. (Sagan Head of School)

Staff at Studio School Sagan had also struggled with the implementation of the CREATE employability framework and had been unable to maintain the employer partnerships that it had fostered in its first year of opening, partly because the employer links had been tied to the first Head of School. When this Head left the school, most of the partnerships lapsed, and the current Head of School was in the process of creating and fostering new relationships. That said, the school did have an ‘employer-in-residence’; a small

entrepreneurial company specializing in developing Virtual Reality (VR) environments. While this company did not provide work experience opportunities, it was more heavily involved in fostering project-based learning that had been attempted since the school's creation. The company helped to curate VR experiences for students and staff to facilitate this learning. Titled 'core project', this element of the Studio School model was in a state of transition as well. There had been a move from the 'outright delivery of all science content' through projects (Sagan Head of Science) to an application of skills and knowledge that was now delivered in structured lesson time. In the first year of opening, staff at the school had been successful in delivering the entire curriculum through projects (but only in Year 10) , but as the numbers of students increased, the time and resources required for delivery of the curriculum to successfully achieve GCSEs proved difficult to maintain:

> there is a bit of a tension about project-based learning. We've had this discussion with Studio Franklin [name changed to maintain anonymity] as well. They're on the same page as us, but not everybody is. Some people think you can teach the entire curriculum through project-based learning. I don't think you can. I think it has to enhance it, which is the stance we're taking. (Sagan Head of School)

Studio School Sagan was a sister school to another Studio School in this study (Studio School Franklin, described in Section 5.4). The two schools had chosen to approach the same specialist theme differently and were a part of the same MAT. Interestingly, the two Studio Schools within the same MAT had not experienced much interaction with one another in the past but were (at the time of data collection) starting to do so; this was indicative of the larger issue highlighted by the Head of School (Sagan) that the network of Studio Schools did not really function like the federation of schools that the architects of the model had envisioned. Staff , leaders, and students at scchols Sagan and Franklin spoke to one another, but this had not been facilitated by the Studio School Trust, rather because the two schools

were part of the same MAT. There seemed to be no direction provided to the Studio Schools by the central Studio School Trust on how to maintain the Studio School model and ethos, nor was there any effort to link the different schools together; something that the new Head of School at Studio School Sagan was keen to change.

5.3.1 Specialisms and qualifications offered

The theme for Studio School Sagan was Space, focusing not only on space flights or space exploration, but also on the various applications of space technology such as satellites, weather sensing and so on. At the time of data collection, leadership and sponsors at Studio School Sagan were in the process of trying to rebrand the school as a 'more generic' STEM school (Sagan Head of School), with a view to offering new qualifications such as a BTEC in Engineering. In 2016, the school at KS4 required its students to study the three separate sciences (biology, chemistry and physics) alongside their English and Maths. At the time of this research, students were on a reduced curriculum (narrower than that which is now currently on offer), with all students studying geography but not a language, for example. Students could also choose between computer studies, product design, astronomy, or media studies. From 2018, students were required to take Computer Science, Engineering and Astronomy alongside their three separate sciences signalling a push towards the strengthening and delivery of a broader STEM offer. The core offer at KS5 revolved around the sciences and mathematics, although the school provided its students with the opportunity to take one of their A level choices at the sister school to facilitate further options for the students. At the time of data collection, all qualifications offered were from the GCSEs and A level list of subjects; there were no vocational qualifications on offer. This in itself was interesting, as one of the core aims of the Studio School model was to be a champion of vocational education, and yet here was a Studio School where sponsors and

leaders had actively chosen not to create a route that included vocational qualifications. The factors that have influenced this have been further explored in Chapter 6.

The building for Studio School Sagan was small and modern, and the inside had elements of the Space theme running through it. Images of satellites and astronauts could be found on the walls, alongside inspirational quotes from scientists and engineers such as Carl Sagan, and Maria Mitchell. The reception was titled 'Mission Control', and the snack area was 'Science-Fry', and whilst the senior leadership at the school recognised the 'gimmicky' (Sagan Head of School) element of these names, they also felt it helped remind their students that this school was striving to be identifiable as THE school in the area for Science and Maths. The Studio School housed a mini observatory with a telescope for the students to use; however, it was underutilised due to a loss of expertise caused by the high staff turnover that the Studio School had experienced in its short lifespan. There was also a planetarium on the grounds of the Studio School, which again, due to the high staff turnover the school had experienced, had not been used for over a year as the expertise no longer existed in the school.

The Studio School also housed a Virtual Reality (VR) suite – the only school in the area to do so – and this was a tool that both the students and staff used to bring their curriculum and projects to life in the STEM and non-STEM subjects. The VR suite held place of pride in the school as it enabled staff and students to embrace more of a project-based learning ethos. For example, when teaching English topics to students an element of STEM could be built in through the coding of the VR space.

The highlight activity each year was a trip to NASA (organised via the MAT), whereby students in Year 13 competed against one another through a writing competition to gain a place. The aim of this visit was to not only experience and understand what it was like to be

working on the frontier of space science, but also to inspire students to be a part of future exploration missions and to engage further with science and engineering

5.4 Studio School Franklin- Space (Aerospace)

Studio School Franklin was in a large town located on the outskirts of a large city. This town had a diverse population of 37,410 (55% of the population identified as White British), and was part of a local authority where trends in 2017 indicated (Local authority statistics, 2017) that relative deprivation had become slightly worse, with 16 areas classified as being within the 20% most deprived in the country in 2015. The largest employment sector in the town was Transport (including air transport) and Storage, followed closely by Retail and Health and Social Work. Twenty-four percent of the population held no qualifications, followed closely by 22% of the population that held level 4+ qualifications.

Studio School Franklin was located in a residential part of the town, near a large international airport, a key link to the theme of the school. Open since 2015, it was located on the campus of another secondary school which was one of the sister schools in a 14-school strong MAT (of which Studio School Sagan was also a part, see Section 5.3). The school was under-subscribed but was close to full subscription by the third year of its opening (when this data collection was finishing). The sponsors and senior leadership were keen to highlight that whereas the school had benefited from internal recruiting from its sister school in the MAT (shared campus) in its early days, they were moving towards a model that involved external recruitment from the local area. Of the Year 11 students who had graduated in 2017, 95% had re-enrolled to be a part of the incoming Year 12. The sponsors and members of the senior leadership teams were keen to highlight that the biggest hurdle in opening the school had in fact been recruitment, given the pushback they had faced from the local community of schools and from the borough itself. Therefore, they

had relied heavily on recruitment from their sister school across the way. That said, by its third year, the leaders felt that it had a 'better working relationship' (Franklin Vice Principal) with not only the borough, but also the other local schools, primarily driven by the Principal's constant engagement with the community to explain to them what the ethos of the Studio School was really about. What had also impacted their ability to enact the Studio School model and its goals, and consequently to recruit effectively was that the school had spent its first year in temporary accommodation. The school, in the small space that they were initially housed in had been unable to build in project-based learning or independent study time - elements which were key to the model's difference from the offer in other local secondary schools. Only once they had moved into their permanent location could the sponsors and school leaders start to recruit actively, as they were only then able to enact the model in a more holistic manner and therefore market themselves more effectively.

At the time of data collection, the school was in the process of broadening its curriculum provision, however leadership and staff would also actively seek out schools in the local area offering a particular subject that one of their students might want to take, and negotiated with the school on the student's behalf for them to study that subject. This was most common with the sister school on the shared campus, but also with another Studio School that was in the local area, effectively opening up personalised learning pathways to students – another envisioned role of the Studio Schools. The school operated a long school day from 8am until 5pm, in part driven by independent study time similar to that in Studio School DeGrasse. Independent study time would allow for students to not only work on their projects, but also aided in maintaining the school's 'no-homework policy'.[76] Project-

[76] Studio School Franklin operated a 'no homework' policy such that the time assigned for independent study was used by students to complete homework with guidance from the teacher if needed. The school's Principal was keen to ensure that this policy was implemented well as this would allow students to have more time with

based learning sat alongside classroom-based learning, with specific days assigned to what was known as 'core project' (like that at Studio School Sagan). During core project time, the students worked on the 'big questions' that allowed them to explore different topics across the curricula, while still learning what they needed to 'for assessment' when in the classroom and in exams (Franklin Vice Principal). These projects allowed students the space to be scientists and engineers solving problems that they had seen in society or had been commissioned to undertake by employers in the local area. The staff at the Studio School were keen to create real-world scenarios for students to work on; they wanted students to be in the real world, working on real issues, and understanding what it took to find solutions as scientists and engineers. As an example, the Studio School had partnered with the Engineering Development Trust (EDT) that ran a programme in the school for six months of the year called EES (Engineering Education Scheme).[77] This scheme allowed the school access to local employers who would call on students to work on their project teams for various solutions they might have been trying to find.

The school had the opportunity to make links with many employers through their focus on aerospace and engineering. Staff at the school struggled however, with meaningful employer engagement such that they did not provide work experience in the way that the original Studio School model had envisioned. Leaders and staff at the school found that while some employer connections were willing to offer work experience to students, the majority were only willing to engage in a fairly limited manner, for example, the employers

family that did not involve schoolwork. Members of the SLT cited anecdotal evidence from parents that this reduced pressure and extra 'time back' had helped improve family relationships at home.

[77] EES is a national programme that allows students to experience life as a scientist or engineer. It is a programme that is provided by the Engineering Development Trust which is a charity whose aim is to increase interest in STE(A)M careers. More information on them can be found here: https://www.etrust.org.uk/about-us .

would give talks, or provided tours for students, but work experience had been trickier to procure. The school learned that the level of engagement was entirely dependent on the individual point of contact rather than the company, and so if the person who was their contact moved on from their role, the school's ties with that employer were in effect cut. However, as noted above, leaders at the school had managed to forge a partnership with the engineering scheme EES that brought employers together to set engineering-based challenges in the form of projects that lasted for one term of the school year. The school was running these projects in lieu of work experience (at the time of data collection), while it continued its endeavours to increase and diversify its offering of work experience via different employers.

Leaders at Studio School Franklin had not embedded the CREATE employability skills framework throughout the entire school curriculum, however had chosen to engage with it such that students were familiar with the language of skills and skills development. The school also had staff who served as Personal Coaches for the students helping them identify areas of skills development and providing them with pastoral care. At this school, CREATE sat separate to the rest of the curriculum, serving as a parallel curriculum that worked on developing not only employability skills, but also pastoral care. This was provided to students not in class time but in time that was specially devoted to CREATE.

5.4.1 Specialisms and qualifications offered

The school delivered its STEM vision through the theme of Space, much like Studio School Sagan, except the emphasis was not on space and satellite technology, but more on the aerospace sector. The building was small, modern, and had an open plan design to facilitate co-working amongst students. There was also a planetarium on the grounds that the teachers and students used (for example, one of the core projects involved the students

designing an exhibition in the planetarium, from the coding to the audio-visual effects, and so on).

The Studio School aimed to 'deliver a bold new model for Scientific and Mathematical Learning' (Studio School website, 2017) via its curriculum and activities. At the time of data collection, all students in KS4 followed English Language and Literature, Maths, Triple science, a language, geography or history, Level 2 BTEC in Engineering, and additionally chose between Astronomy, Statistics or Robotics. In KS5, all students were required to follow courses in BTEC Level 3 Engineering, and BTEC Level 3 Science, with the option to choose further from academic courses in Biology, Chemistry, Physics, Psychology, Maths and Further Maths, which were offered by the other schools in the MAT. There were quotes from scientists that dotted the walls of the school with the aim of inspiring students from entry to exit. The building also housed science laboratories, an Engineering workshop, a Robotics Laboratory, and Food Science kitchens. As mentioned before, Studio School Franklin was a sister school to Studio School Sagan by way of its MAT and offered the same inspirational trip for Year 13s to NASA. There was also a Robotics Laboratory which was fitted with a 3-D printer, and Raspberry Pi's[78] facilitating a makerspace for students to bring their curriculum and projects to life.

5.5. What can be learned from the contextual dimensions?

This chapter has sought to bring the Studio Schools in this study to life via a consideration of its *situated*, *professional, material*, and *external* dimensions. These were schools that were in located in varying geographies, with very different demographics and local authority and school system characteristics. The schools all had different sized and numbers of employer

[78] Raspberry Pi – A credit card sized computer designed to facilitate the learning of coding and computing at a low cost.

partners and were part of different MATs (except for Studio Schools Sagan and Franklin which share a MAT). This variation is typical of the fluidity of the Studio School model as described in Chapters 2 and 4. The schools had even adopted varying approaches to the way the STEM specialism was embedded in the framework of the school. Two of the schools had embedded the STEM specialisms throughout the DNA of the school (Studio Schools Curie and Sagan), while one of the Studio Schools (DeGrasse) was still in the process of defining its specialism and establishing its approach to enacting it in the school. No two Studio Schools in this study operated in the same manner nor looked the same (despite Studio Schools Sagan and Franklin being a part of the same MAT), which was in line with what the creators had envisioned for the network of schools.

The characteristics of the local areas that all four Studio Schools were in made obvious elements identified previously by other researchers (Cook et al., 2016) in that there was no obvious link between specialism choice and the local economy. That said, Studio School Franklin had been purposefully set up in a location to take advantage of proximity to a large international airport. Indeed, the school had links with key employers in the aerospace sector (which contributed to the largest employment sector as well), making the connection between the needs of the local community and the school more obvious. It was also important to note that Studio School DeGrasse had been set up to offer qualifications linked to themes around Sustainable Construction and Logistics; again, purposeful choices with the future trajectory of the required skills for the future of the town the school was located in (the town was developing into an Eco Town and did indeed have a growing logistics sector). However, early on in its development, the Studio School had pivoted and changed its qualification choice and overall theme for reasons that will be explored in the next chapter.

The contextual understanding of the individual Studio Schools presented in this chapter also demonstrates that all the Studio Schools in this study struggled to implement and maintain all the key elements of a Studio School over the course of their journey as a school. All the Studio Schools, for example, were unable to deliver the entire curriculum through project-based learning where some of the schools lacked the funding structure to deliver the coaching model that was envisaged by the model. This struggle was in part due to the foibles of the governance structure within which the Studio Schools were operating (MATs), or even due to the lack of own space, but also because of external factors in the wider education landscape, such as high stakes examinations, a 14-19 marketplace rather than a system, high cost, increased competition, and even a lack of support from local government. This struggle to maintain an ethos that was core to the Studio School model was an issue that had been identified by the creators of the Studio School model (Chapter 4, pp. 144-146) as well. The realities brought to life in this chapter further highlight the need to not only understand what role these schools have ended up playing in their local communities, but raises issues about the possible need to recast the mission of the Studio Schools or have a rebranding exercise to ensure they had a viable future.

What has also been highlighted in this chapter is that where the Trustees of the model had believed that having a STEM specialism would have provided the individual schools with an effective tool for recruitment, the schools still faced the same woes for recruitment as highlighted in Section 2.1.3. All the Studio Schools in this study had struggled to recruit students easily (with the exception of Studio School Franklin which was closer to being fully subscribed versus any of the other schools). The schools in this study all described this inability to recruit students as a consequence of policy changes linked to restricted funding which led to increased competition amongst schools, and an inherent

tendency for schools and communities to label schools that had even an inkling of a practical focus or link to employability as the lesser offer (for example, in Studio School Curie, the staff used the term 'academic vocational learning' to qualify the rigour of their offer). These are considerations that will be returned to in the final chapter as the role of the Studio Schools is discussed in relation to its shaping by and influence on the current policy landscape. While the data were not gathered quantitatively, it is clear from the interview data collected across the four schools that the schools in this study had recruited three broad categories of students:

1) those passionate about pursuing a career in STEM,
2) those looking to make a fresh start (either for academic reasons or because of behavioural issues in their previous school environment),
3) and those that just did not quite fit in their previous secondary schools (for a variety of reasons such as special needs, personality types, and even subject interests).

The students who chose to attend the Studio Schools at age 14 spanned across all three groupings, whereas those who were choosing to come to the schools in Year 12 (post-16) were predominantly in the first category (the coding framework for this can be found in Appendix E).

A key consequence of the academisation movement post-2010 was the 'atomisation of the national school system [resulting in] complex academies in operation' (Male, 2017, p.8). As discussed in Chapters 2 and 4, these academies now exist in a market model of education, siloed from one another, competing for ever-dwindling student numbers and funding. The relationship that all the Studio Schools in this study held with the other schools in their MATs could be described as one of varying degrees of symbiosis and dissent. Being

part of a MAT held advantages for a Studio School in that they could make use of the MATs larger structure to reduce costs on 'back-office' support, which was hugely important for the Studio Schools to remain viable and operational. It also meant that the Studio Schools could function as the model had envisioned; the MATs functioned as a mini system of collaborative institutions within which students could benefit from personalised learning pathways. For all the Studio Schools in this study, being part of a MAT meant that their students could take a particular course (if not offered at the Studio School) at any of the sister schools within the MAT, something that students could not do as easily within the wider market of education.

However, while there were advantages to being in a MAT, the Studio Schools in this study also faced several difficulties within the MAT structure. All the Studio Schools struggled to maintain their distinctive identity as a Studio School, as having to operate within the structure of a MAT meant that they were to function as both Studio School and MAT school, and juggle both those identities. The leaders at the Studio Schools expressed the need to maintain a steadfast belief in the Studio School model to ensure that there was not too much 'drift' towards behaving like any other secondary school. All the Studio Schools' leaders indicated a level of compromise in the delivery of the Studio School model in order to 'fit' within the ethos of their MAT, which stood in contrast to the premise of the academisation model, which was about creating greater autonomy for schools in order to provide greater choice for parents and students alike. As much as the academy structure functioned as a system of sorts, the Studio Schools also found that they still faced intense competition and pushback not only from local schools in the area but also sometimes from the other schools in the Trust, particularly in terms of recruitment, resulting in tension between the schools in the Trust. When looking at the case study sites, there was also

evidence of the detrimental impact of stricter accountability measures and changes to funding structures, and that these measures were having an impact on the role that these schools were intending to play in their local communities. This, however, will be explored in further detail in Chapter 6 when the factors influencing the choice of qualifications and adopting a STEM banner will be explored.

5.6 Chapter Summary

In understanding the 'situated, professional, material and external dimensions' (Ball et al., 2012, p.21) of the Studio Schools in this study, the tensions that they balanced to maintain the unique elements of the model were underlined. This uneasy journey that all the Studio Schools have encountered highlights and further builds on the narrative in Chapter 4 that Studio Schools were a model of education that could have been successful in a different policy time. This chapter has sought to provide the reader with a sense of not only what the Studio School model looks like in reality, but also to paint a picture of how chosen specialisms were embraced and brought to life in these schools. The next chapter will seek to identify and understand the factors that have contributed to the choice of these specialisms given the particular characteristics of the populations and areas that these schools are meant to serve.

CHAPTER 6 – Understanding why Studio Schools chose STEM specialisms

The landscape of English education and the role of Studio Schools in it is complex. How this role was envisioned and what Studio Schools look like in practice has been the focus of the thesis thus far. The literature review (Chapter 2) showed how the majority of Studio Schools, in an ever-changing network of schools (in an ever-changing landscape of policy), adopted a STEM-based specialism (over 75% of the Studio Schools in 2020).[79,80] In Chapter 4, the architects of the model highlighted that such a singular focus on the development of STEM skills only was never an intended feature of the model – the model had been envisioned as purposely fluid with the schools functioning as a reflection of the local need to meet the requirements of diverse industries. And yet, not all of the 'STEM' Studio Schools in this study (see Chapter 5) were in an area with an obvious link to the chosen specialism (that is, the geographical area did not have a high proliferation of STEM-based industries).[81] So why had Studio Schools in the network chosen to develop STEM skills? Why those specific courses and qualifications? Had the choice of STEM qualifications been a deliberate move to shape the role of the schools in their local communities? These are the questions that this chapter addresses in answering the research question: *What key factors influenced Studio Schools to have a STEM specialism?*

The four case study schools were varied and have brought to life their chosen specialisms in completely different styles, as made obvious in Chapter 5. This chapter presents a holistic overview of why Studio Schools chose to adopt a STEM specialism in the

[79] As a reminder, in 2020: Number of open Studio Schools = 24; Number of Studio Schools with a STEM specialism = 18. In 2016-2017 (when data collection was in progress): Number of Studio Schools = 37; Number of Studio Schools with a STEM specialism = 28.
[80] For an understanding of how these schools were classified as STEM schools, please see Section 2.2.1.
[81] This finding is in line with the findings of all Studio Schools, even those that do not offer any STEM-based specialisms (Cook et al., 2016). Please see Section 2.1.3 for more details.

four schools. The findings presented in this chapter are based on interview data collected from the sponsors, headteachers/ principals and senior leadership teams (SLTs) at these four case study sites, as these were the key stakeholders responsible for crafting the 'vision' of the school. The interviewees were treated as 'policy narrators' (Ball et al., 2012, p.49) responsible for interpreting and translating (i.e., enacting) the Studio School vision and policy, and for putting in place, the STEM vision in their respective Studio Schools. All members of the SLT played multiple roles within the school (including being a part of crafting the vision for the schools) and so for the purposes of policy narration, they have been given equal importance as the Principal/Headteachers of the schools. The members of the SLT therefore played an equal role in the interpretation, narration, and crafting of the vision of the school.[82] Sponsors were also an important voice in understanding the rationale for not only the specialism and qualification choice but also school ethos, as it was one that was crafted in partnership with them.[83] In this chapter, the emphasis is on understanding the vision for adopting and bringing to life a STEM specialism at the Studio School. The analysis from this group of stakeholders was developed for each school (Appendix C), and these were then analysed cross-case to provide an understanding across the STEM schools in this study. It is noteworthy that the SLT in each of the case sites looked very different in size and makeup due to the dynamic nature and scale of staffing at the schools (a breakdown of each school's SLT is provided in Appendix D). The findings presented in this chapter shed light on the reasons behind choosing STEM specialisms in the Studio Schools (in all four schools, it was the headline offer); it also creates a preliminary understanding of

[82] Please see Section 3.2.1.2 for a detailed overview of the different typologies of 'policy work' that can occur in a school, and how individuals across the school can between roles or combine different aspects of the different roles in their work.

[83] As introduced in Section 2.1.1, sponsors of Studio Schools played a role in establishing the vision for the school and operationalising that vision.

how the choice and adoption of these STEM specialisms shaped the role that the schools were trying to play in their local communities.

As a reminder, the four Studio Schools had on offer diverse qualifications (both academic and vocational at Level 2 and Level 3) that fell under the broad umbrella definition of STEM,[84] and these are as follows (KS4 only shown):[85]

- Studio School DeGrasse (academic and vocational) – Sustainable Construction and Logistics (Combined Science, Triple Science, Computer Science, Product Design, Engineering, Physics, Biology, Chemistry, Computing)
- Studio School Curie (academic and vocational) – Biosciences and Electronic Engineering (Applied Science, Design & Technology, Games Development, ICT, Biology, Chemistry, Physics, Maths, Further Maths)
- Studio School Sagan (academic only) – Space (Biology, Chemistry, Physics, Maths, Astronomy, Computer Studies, Product Design)
- Studio School Franklin (academic and vocational) – Aerospace (Engineering, Astronomy, Statistics, Robotics, Maths, Triple Science, Biology, Chemistry, Physics, Psychology, Further Maths)

In opting for these qualifications, despite their specialised focus on STEM subjects, leaders at the Studio Schools tried to provide their students with as broad a curriculum as possible because they:

a) wanted their students to be exposed to as many subjects as possible to develop students who were more 'well rounded and entrepreneurial' (Curie Principal),

[84] The qualifications listed here are those that fall under the STEM umbrella as defined in Section 2.2.1.
[85] For a more complete list of the qualifications offered in each Studio School, refer to Chapter 5.

b) wanted to emphasize to their students that scientists and engineers not only needed a grounding in science and technology related subjects but also required a good grasp of English and humanities subjects to be successful in their intended careers as STEM professionals, and
c) to meet the requirements of a rigid ever- changing accountability system.

When the leaders and sponsors across the Studio Schools were asked to consider what the influencing factors were when choosing which STEM subjects and qualifications to provide, they were unanimous in emphasising that the choice had been based on maintaining a delicate balance between meeting the needs of employers, being acceptable within the government's prescribed accountability measures, and sustaining the desires of the parents and students in the local community, all the while attempting to engage with debates on the delivery of STEM education at the secondary school level that they were passionate about and which they believed needed addressing.

The Studio Schools in this study are a representation of the issues, choices and debates prevalent in STEM education – a microcosm for the debates on why there was a need for STEM skills, what was needed in schools to make STEM education more effective, and the disconnect between policy and practice. The decision to adopt a STEM specialism in the Studio Schools in part stemmed from a desire to contribute towards and be trailblazers in the discourse on STEM education in England. The dialogue of STEM in England has been dominated by questions relating to the development of STEM skills, how it should be approached, and even the emphasis placed on certain qualifications versus others (see Section 2.2.3). All of this sits amidst a disconnect between policy and practice surrounding the need for STEM skills and what the goals of STEM education are (see Section 2.4.1). For

policymakers across the world, and indeed for the architects of the Studio School model as well, the development of STEM skills was very much framed within the context of contributing to the growth of the economy; the development of 'missing skills' for the economy is one of the envisioned roles in the Studio Schools model.[86] For the individual Studio Schools in this study (and for educators and practitioners)[87] however, the adoption of a STEM specialism was about more than the generation of skills for the economy; it was about challenging the way STEM education was viewed and approached in secondary schools.

The Studio School leaders attempted to provide an integrated approach to the delivery of their chosen STEM qualifications as a mechanism to enable their students develop and hone their identities in relation to the related STEM careers (Burgin et al., 2015; Hsu & Fang, 2019), thereby increasing their engagement in the STEM subjects (Archer et al., 2010, 2013). They were keen to have their students view themselves as students studying STEM subjects and wanted to instill in them a sense of 'being' scientists and engineers who came to work (albeit in a school) every day. They wanted to address what they believed was the gap between school science and 'real' science, which was a criticism that was widely held in debates concerning science education (Archer et al., 2010, for example),[87] partly by providing a greater emphasis on the practical learning that the school leaders felt was diluted in the (then) current mainstream secondary school provision. In addition, the choices made by the leaders at the Studio Schools created a place for those subjects that were important for STEM-based workplaces (as discussed below in Section 6.2), yet neglected by policies on STEM education that placed more emphasis on certain subjects

[86] See Section 2.4.1 for the framing of the national debates on the development of STEM skills in England. Section 4.2 brings to life the Studio School model architects' views on envisioned roles of the Studio School.
[87] See Section 2.4.1 for a more complete overview of the debates in science and STEM education.

only (for example, science and mathematics versus design and technology,) as the only means by which pathways to work or higher education could be opened.[87] Showcasing these 'neglected' subjects allowed leaders at the Studio Schools to provide a more comprehensive view of the varied and diverse pathways to careers in STEM.

The school leaders viewed the STEM offer as a means of raising the educational and career aspirations of the local community within which they are based. The interviewees across the schools described wanting to provide for their communities a provision that was 'so much better than what was on offer' (Franklin Sponsor). The leaders and sponsors felt that in the context of their local communities, the STEM specialisms and the associated career pathways made available were more prosperous options for the students. They were keen to raise understanding and awareness amongst students of these choices and where they could lead, and how the Studio School could be the means to attaining those aspirational choices.

It is important to address the fact that two of the Studio Schools in this study were not in areas where STEM-based industries were prominent, and therefore arguably not really following the Studio School model of meeting local employment and skill demand. These schools fell into the category of those Studio Schools without an obvious link to the needs of the local labour market (Cook et al., 2016). Both Studio Schools Curie and Sagan had been established in their respective locations for different reasons. In the case of Studio School Sagan, it was because the original Head of the School had wanted to set up a STEM-focused school as an aspirational addition to the landscape of local provision and happened to have excellent contacts at the National Space Centre in Leicester. Knowing that the theme of 'Space' would be 'attractive' (Sagan Sponsor) to the local community and wanting to contribute to the various conversations surrounding STEM education in England

(addressed further in detail in this chapter), a decision was made by the Studio Schools' initial SLT to capitalise on the Head's contacts to found the new school.

Similarly, at Studio School Curie, the Head of Science had been involved in writing the bid to establish the Studio School, and the theme for the school had been modelled around their expertise and connections. They were responsible for the development of STEM-based project-based learning at the mother school (see Section 5.2), and had run the genetics laboratory and associated projects for over 25 years; building extensive contacts with industry (including the technology company that was one of the school sponsors) and universities. Studio School Curie's brief to the Department of Education (Curie Sponsor) had capitalised on this existing resource, which while not feeding skills into the immediate area (but the wider national skills need), contributed to a number of debates in STEM education (described in the sections below). In the case of both Sagan and Curie, the schools were not built using a bottom-up approach based on local skills need, but rather based on the resources/intellectual interests that were available to the schools at their foundation, and this seemed to be the driving force for the overall STEM focus at the two schools. That said, having the existing resource made it significantly easier for leaders at the Studio Schools to be able to deliver successfully on various elements of the Studio School model such as the projects and employment opportunities, essentially allowing for the establishment of the school without large amounts of work needed to make these elements of the model come to life .

Moreover, as the architects of the Studio School model suggested (Section 4.4), the schools in this study did in fact use the STEM banner as a mechanism for recruitment. This recruitment role was framed not only in relation to attracting students, but also in terms of staff recruitment. Interestingly, at two of the schools (Curie and Franklin) SLTs felt that

having a specialisation, and the marketing around it, was akin to a double-edged sword; where the specialisation had meant to be the way to engage with employers, recruit interested students and to distinguish oneself from other schools (and they did indeed aid in this), it also distracted attention from other elements of the Studio School model . The choice of specialisation was considered a 'red herring' (Curie Headteacher) in the sense that it was almost secondary for the SLTs in these cases. Rather than Studio Schools serving all students, leader at these two schools felt that they were viewed more narrowly as only STEM schools serving **only** a few students:

> Yes, we're a STEM school but I don't think we necessarily have that as a mindset. We do talk about the fact that we specialise in it but that's not what we are about. We're about encouraging staff or students to follow their passions. (Franklin Principal).

This was ironic, as these schools also reported issues in recruiting a comprehensive population of students due to competitive behaviour from surrounding schools (see Section 5.5) and lamented the inability to recruit more students who were truly interested in the STEM specialisms and careers in STEM, rather than those looking for a fresh start. Although leaders and sponsors at Studio Schools Curie and Franklin believed that their 'brand' for the school had become linked to a STEM offer rather than to the Studio School model and offer, in reality the Studio School 'brand' was perhaps inherently muddled and confused, detracting from the ultimate intention of the model itself (see Sections 4.5-4.6). This is something that will be discussed in greater detail in Chapter 7 when understanding how, in practice, the Studio Schools viewed their role in education.

To summarise, all the four schools prioritised the desire to contribute to important national debates surrounding the STEM subject offer, improved STEM teaching, and the availability of appropriate skills for a changing economy as key factors in setting up a Studio

School with a STEM focus.[88] The leaders and sponsors of the schools felt that by choosing the STEM specialisms they had contributed to debates shaping the way the specialisms impacted on the schools. These intended contributions are discussed in the sections below.

6.1 Meeting the STEM skills 'need' for the economy

Part of the rationale for setting up the STEM Studio Schools was the contribution to the development of the supply of STEM skills, which the SLT and sponsors felt was sorely 'missing' for STEM industries (Franklin Principal), if not in their localities, then at wider levels:

> We have a massive skills gap in the UK, significant. The economy that we are having now is moving away from manufacturing in the UK. Moving away from traditional manufacturing, it's coming back towards manufacturing, but it is high-end technical practice. Having that engineering expertise and that maths expertise nationally is a problem. We are crying out for graduates into those fields and we don't have enough. Universities can do that but actually, it needs to come from further down. This idea of school is great, getting people that have already focused on STEM to really think about that and move down that route. (Sagan Head of Science)

> We need more people taking the STEM subjects. We're trying to bridge that gap[referring to the lack of people in STEM jobs] really by spending half a week doing the industrial work and the other half a week telling stories how exciting that industrial work is and what opportunities are for them. It's a nice mix. (Franklin Sponsor)

The SLT and sponsors across the schools viewed the choice of specialisms as a way for the schools to function as feeders for increasing supply of STEM skills to meet the needs of either the local or national economy:

> All the LEP reports, all the skills board reports that have been published, as I said probably in the last decade, have all pointed to the need for more of this type of provision, so we're simply responding to that…..We're trying to connect STEM education with high density of STEM businesses [in our area]. (Degrasse Sponsor 2)

[88] See Sections 2.2.3 and 2.4.1 for a reference to the policy rhetoric on the need for STEM skills, and the existing debates in STEM education.

> The model for Studio Schools is to mirror the industry in and around the school, around the area, so [Airport X] is massive…… I think that's, it's easier for us to make business links if we are in the same area as the local people who work in those businesses. (Franklin Principal)

At Studio Schools DeGrasse and Franklin, it was highlighted by school leaders and sponsors that the schools were set up very much with the needs of local employers in mind; subject specialisms and qualification choices focused on areas where skill supply was lacking in relation to the needs at a local level. In Studio Schools Curie and Sagan, the argument was framed more in the form of a contribution to a regional (and to a lesser degree although still important) national shortage of STEM skills (see previous section and chapter 5). As such, the argument for developing and contributing to the supply side of STEM skills had been framed on a more regional level at Studio School Curie:

> I think there is demand in this area for those skills, but I think also more broadly in the Southwest, and in City Y, I think there are lots of technology startups and there are lots of those kinds of things going on. I think absolutely and obviously, [Employer Sponsor] sees a need for it as well. There's definitely a demand and a need for it. (Curie Head of Computing)

This development of skills for the economy, however, was not straightforward for the Studio Schools in this study. The schools faced restrictions in the offer they provided to students within an ever-increasingly restrictive framework of accountability and rising costs as will be demonstrated in the following sub-sections.

6.1.1 Balancing the skills 'need' in a rigid world of accountability

At the time of data collection, as noted above, Studio Schools, like all other secondary schools were learning to navigate an increasingly rigid accountability system.[89] From the

[89] For a detailed overview of the changes in accountability measures that were impacting Studio Schools sharply, please see Section 2.4.4.

introduction of the EBacc policy (2010), to that of Progress 8 (2016),[90] leaders and sponsors at the four Studio Schools found themselves in the position of needing to balance the needs and 'asks' of employers against those that were being put into place by national policy and its accountability regime. The interviewees across the four schools argued that the changes to qualifications favoured under the evolving accountability regime were 'wrong, and are totally unexciting' (Franklin Principal), in line with the needs of a 'political dictum' (Sagan Principal) rather than a reflection of what was needed in the workforce. The interviewees across the four schools felt that these restrictions prevented them from correctly representing to students and parents in the local communities how qualifications could lead to STEM jobs and destinations. Indeed, the qualifications the schools were 'settling on' (DeGrasse School Principal) to meet the requirements of the accountability measures did not, in fact, meet the asks of the employers who the Studio Schools were meant to be serving in their local areas. The SLT at three of the four schools were united in their frustration of their limited choices purely based on accountability:

> It's not preparing them for the future. It's not plugging the holes of the employment workforce. That is very frustrating. What I'd love to see is that at least in the Studio School, we would be able to be a lot more experimental with the curriculum. The qualifications simply aren't there, or they're there, but not given any-weighting on Progress 8. (Curie Principal)

Leaders at one school in particular felt that the EBacc especially was not broad enough to cover the specialist nature of the Studio School model, and that not being able to say that their specialism was part of the EBacc was proving to be a deterrent for the school in terms of recruiting from the local community:

[90] As a reminder, the EBacc policy introduced a limited set of subjects that would count towards students working towards the Baccalaureate. Progress 8 was a new measure that held schools responsible for a student's academic progress since Year 8, irrespective on when they joined a school.

> I think that the thing that makes the biggest difference to the success of this school would be if design and technology GCSE was included as one of the sciences in an EBacc. I will speak honestly about this. (Curie Sponsor)

In trying to meet the requirements of the accountability measures, the leaders and sponsors across the four schools found that in the lead up to opening their doors to students, they needed to change their qualification offer, or not offer an entire qualification. In turn, this meant not meeting the needs of employers, which was in fact one of the core tenets of the Studio School model. This was particularly poignant at Studio School DeGrasse, where the school leaders had initially advertised and marketed themselves as a school that focused on sustainable construction. The specific qualification and specialism choices had been based on talks with local employers who were involved in enhancing the 'green city' status of the town that the school is based in. These employers had discussed specific skills that they needed in the local economy, leading to the choice of a BTEC qualification in construction with an emphasis on sustainability as the qualification offer for the school. Yet, before the school even opened, the interviewees indicated that they had to pivot to a different qualification offer driven entirely by the emphasis placed on meeting the needs of an accountability system, and the way accountability measures were viewed by parents:

> **Degrasse Principal**: BTEC construction isn't a course that we can run. And the way BTEC units can be combined has changed so we don't have that flexibility. So, essentially, it's based on performance tables.
>
> **Interviewer**: So, in terms of what qualifications you can actually offer? What counts for the league tables [is important]?
>
> **Degrasse Principal**: Yes.

Notably, leaders at Studio School Franklin viewed the rigid accountability system in a more positive light. Adhering to the needs of this system meant that these leaders felt able to provide a broader offer of subjects to its students, thereby providing a more balanced curriculum to support its specialist offer. This was one of the two Studio Schools in this

study where the specialism choice was considered a ‘red herring’, detracting from the Studio School model’s envisioned intentions. By providing a more balanced curriculum, with the choice of STEM specialisation providing for work experience opportunities, leaders and sponsors at the school felt able to emphasize all of the elements of the Studio School model better than at other Studio Schools that were highly specialised. The belief at this school wasthat the wider curriculum would create more informed, and hopefully, successful scientists and engineers:

> That's [a] pretty broad [curriculum] really. Would I want us to-- Because there's an argument that some studio schools are taking streams of years 7, 8, 9 so one class on. Would I do that? No, I wouldn't because I think it's important, but they have experience in music, art, drama as they come up through the school…. it has become more and more important in terms of the application of science and [using those broad skills] to do so in a creative way. (Franklin Principal)

Where this section has focused on the restrictions of the curriculum offers faced by the schools due to accountability, it is important to address the fact that qualification choice was also hampered by cost. This was important as Studio Schools were intentionally set up to be small schools. And yet, it was this very feature that limited the budgets that the Studio Schools had to operationalise all the elements of the model. In some cases, this meant having a limited or in some cases, different qualifications offer versus what was desired, something that will be discussed in section 6.1.2 below.

6.1.2 Balancing costs

On the one hand, the Studio schools in this study wanted to contribute to the supply side of STEM skills. On the other, the SLTs and sponsors across the four schools were cognizant that their chosen subjects and qualifications were the ones that required the most in terms of investment and delivery costs. In fact, it was not always possible for mainstream secondary schools, let alone Studio Schools with their small budgets, to be able to offer these specialist

options in a sustainable manner. Cost (financial, human, and resource) was a particularly important consideration from the perspective of these small schools as they faced stiff competition from FE colleges in the local area, which had access to more resources than them to offer similar types of qualifications. Studio School DeGrasse, for example, had opened its doors without all of its specialist engineering equipment in place, as they had not received the specialist funding, they had applied for, and staff were teaching their offered BTEC Engineering course by utilising the space and equipment that was available at another provider within their MAT.

Recognising the implications of the high costs, the interviewees in this study sought to challenge both the (then still-operating) Studio Schools Trust and government. It was the significant investment made by employer sponsors, or through being part of a larger MAT, that enabled the schools to offer the qualifications that they had identified as required for building the skills of the local, regional or national economy:

> Does the Studio School Trust, does the government recognize that if we want technologically adept young people, we have to invest a lot in this kind of education? (Curie Sponsor)

Even though the schools had found ways to be viable (for that moment in time), for example through either employer investment or MAT sponsorship, these investments came with a price relating to their autonomy:

> I joined in September and the plans for the kit that goes into the room were probably what I felt was particularly relevant for [technology]education, so I put quite a lot of the kit on hold. It's just gone around in circles, that they haven't [even] put extractors into the workshops … That's basics but that wasn't in place and now there is no money to put that in place. It's the frustration of not being able to stand alone at the school and make decisions. You are always dependent on the purse strings or their senior management team and the curriculum and things like that. You can't manage it yourself so that's the frustrating element of it. (Curie Head of Technology)

This was even more obvious in the case of Studio School Sagan, where the SLT were looking to offer a BTEC in Engineering. They recognised they had significantly smaller budgets within which to accomplish this compared to the local FE colleges, and so recognised that they would be setting themselves up as the poorer offer in the area:

> Yes. We're currently toying with, "How can we afford to put on the courses we need to put on?" We can't compete with the college. They've got far too much money to plough into the resources that you need to do the kind of courses that maybe we'd like to put on in order to compete. We've got to think about what niche are we actually sitting in. (Sagan Principal)

Chapter 5 demonstrated how the schools' reliance on their MATs placed them in a symbiotic yet fractious relationship with other schools in their MATs. The SLTs across the four schools felt extra pressure from their MATs or employers to do as they wanted or did and found themselves in the position of being unable to make key decisions for themselves. It was also interesting to note that these leaders acknowledged that whereas they were trying to offer specialist qualifications that had links to work, they would never be able to compete with FE colleges in terms of scale and resource availability. It is key to remember that the architects of the model had explicitly chosen to keep Studio Schools outside of FE . This decision, in effect, held consequences for the way individual Studio Schools' budgets would be structured, what resources they could rely on; essentially Studio Schools were limited from their very inception. This is a theme that will be returned to in Chapter 8.

6.2 A desire to showcase STEM subjects neglected by other secondary provision

Chapter 2 highlighted the philosophical debates surrounding the definitions of STEM (Section 2.2.1) and the diverse policy discourse (Section 2.4.1) that has placed an emphasis on certain STEM subjects and types of qualifications versus others. A common belief (across three of the four schools) amongst the interviewees was that STEM provision in most secondary schools was fairly narrow and limited to the academic curriculum only, thereby

neglecting some of the very categories that even made up the acronym. At most secondary schools, 'STEM provision is limited to science and maths' (Franklin Vice Principal), with an 'almost complete neglect of technology' (Curie Sponsor), and also a very limited emphasis on the vocational qualifications such as engineering; this being a vocational offer, it was viewed as the remit of FE colleges according to the Principal at Studio School DeGrasse. The interviewees from these Studio Schools felt that by showcasing only science and mathematics as pathways to STEM careers, other secondary schools were being disingenuous about the ways in which students could access those careers. Three of the four Studio Schools aimed to offer a mix of vocational and academic qualifications to their students allowing them to explore STEM subjects unavailable in other secondary schools. At Studio School Sagan, a slightly different approach had been adopted in that the STEM subject offer was comprised entirely of GCSE and A level subjects. The SLT had chosen to offer a range of GCSE and A level qualifications as they felt that this 'academic STEM offer' (Sagan Head of School) was the best way to market the school to parents and students in their local area. They believed that the combination of these subjects alongside project-based learning and the links to employers allowed for not only exposing students to diverse career options in STEM but also facilitated the maintenance of the ethos of the Studio School model without necessarily having to explicitly link it to a vocational qualification offer. Also, within the academic qualifications, the leaders and sponsors had ensured that the offer went beyond the usual choices of science and mathematics to offer Astronomy to the students as well. At Studio School Franklin and DeGrasse it was a BTEC in Engineering which also tended to be neglected in the secondary school setting.

At Studio School Curie, for example, the sponsors founded the school with technology sitting at the heart of it. The sponsors believed technology was one of those

subject areas that was completely ignored in secondary schools, in part driven by the policy discourse on technology integration in the curriculum (see Sections 2.2.3 and 2.4.1), and also due to the expense associated with ensuring that a technology-based curriculum was delivered properly (Curie Sponsor). Indeed, the sponsors and SLT at the school had consciously decided to offer Design and Technology as part of the curriculum despite national uptake of the qualification dwindling (Spielman, 2019) driven by the narrow qualifications framework for the English Baccalaureate (ibid). In effect, the school was choosing to not meet the requirements of the accountability framework to ensure that students received the qualification best suited to the theme of the school and the employer sponsors' needs. In addition, the school leaders and sponsor had wanted to elevate the status and need for technology as a valuable contributor in STEM:

> Obviously, as a teacher of design technology, which is a subject that is being side-lined in a lot of schools at the moment it appealed because it felt like it was being transcended and moved into something away from the normal school technology. (Curie Head of Technology speaking on the Studio School's emphasis on technology in the curriculum)

The sponsors at Studio School Curie had, in fact, chosen to make significant investments through the purchase of equipment and through supporting the hiring and professional development of specialist teachers to ensure that the curriculum 'had a seasoning of technology [all] through it' (Curie Sponsor).

The next section focuses on the mechanisms for the delivery of STEM qualifications that have been employed by the school that engage with more contemporary debates on how to reengage or engage students in STEM.

6.3 A desire to challenge secondary provision to increase student engagement with STEM

The value of STEM to these schools and its leaders cannot be underestimated. This section focuses on the willingness of the school leaders and sponsors to participate in and work on

the policy concerns around student engagement in the STEM subjects (as has been highlighted by various researchers, such as, Osborne & Collins, 2010; Archer et al., 2013). The SLTs, and sponsors across the four schools believed that secondary provision (at the time) was not doing enough to deliver STEM subjects in the integrated manner required to help build engagement with the subjects. The approach to STEM education in (the then) mainstream secondary provision was seen as being one that was piecemeal (DeGrasse Principal) and not preparing its students for the world of work in science and engineering (Curie Head of Science); all the interviewees across all four schools were united in their belief of this. While none of the Studio Schools had a specific 'STEM policy', similar to that found in some other secondary schools, these principals' preferred to approach the deployment of STEM skills in a manner that they felt was more integrated than at other secondary schools:

> I don't think we have an explicit one… if you find STEM policies, most of the time they will be because a typical secondary school has tried to make links [across subjects], and it will be a little burst, and then it will disappear again (Curie Principal)

Most members of the SLTs across the four schools emphasised that their experience of secondary schools involved STEM subjects taught in discrete silos, with a lack of a 'joined-up conversation' (Franklin Principal) between the subjects. This, they believed, was not how students would experience working in STEM industries and therefore tried to embed an ethos of learning and interaction with science and technology that was more real-world – something that would mirror what students might experience as scientists and engineers:

> Science in schools …needs to be more joined up than [it is] … to give students an understanding of what it means to work in these industries. (DeGrasse Principal).

The SLTs at the four schools had chosen to embed their specialisms in a diverse manner of ways (as made evident in Chapter 5) – from the naming of classrooms to reflect the theme

(Studio School Sagan), to the world – ranging development of links between industry, universities and students (Studio School Curie) to the physical manifestations of projects that formed part of the school furniture (Studio School DeGrasse). These physical representations and opportunities were ways in which the SLT and sponsors of the schools embedded science and technology into the life of the school.

In so far as these physical representations helped with embedding, an emphasis on practical provision was also used as a means to develop student engagement. Secondary school provision for science and technology was seen by all these interviewees as having shifted away from the practical preparation required for successful scientists, in part driven by the changes in national policy on the assessment of practical skills at GCSE and A-level. The SLTs across all four schools wanted to challenge this shift towards a weaker focus on the development and assessment of practical skills.[91] They were united in their belief that this was making the students less engaged with the subjects as well as less suited to pursue careers as scientists and engineers as they would not have a firm appreciation for the basic practical skills that were required for those jobs:

> What I was aware of is there were a lot of students who were very good at maths and physics who find themselves in a position of not having a knowledge of applications in industry and problem solving which is where so much of industry really is. (Curie Head of Science)

The school leader' desire to shift the narrative for their students from one of 'doing' science and engineering to that of 'being scientists and engineers' (DeGrasse Head of Science) was paramount. They wanted to ignite their students' interest in the STEM subjects and in

[91] In 2015, Ofqual announced that there would no direct assessment of practical skills in GCSE science qualifications for September 2016 onwards. Where science organisations and teachers alike acknowledged there were issues with the current system of assessing practical work, they also felt that this move by which students would be assessed on their knowledge of practical work and experimentation via an exam, rather than via practical work, could have a knock-on effect of discouraging practical work in schools which was so important for preparing students to be scientists (Childs, 2019).

STEM-related careers by providing them with a representation of science and engineering that they felt was an accurate representation of reality:

> Students have told us if they were going to engage in STEM, they wanted to do things which were authentic and relevant to themselves, in their lives today. (Curie Sponsor)

Importantly, providing students with the opportunity to work on 'real world problems '(Sagan Vice Principal) through employer experiences or even independent projects was seen as bringing these subjects to life. While the school leaders and sponsors acknowledged they were not going to entice every student on the path of a STEM career, they aimed to provide an offer where students could engage with STEM subjects in a meaningful manner:

> They're not all going to end up being conservation geneticists, but what they've learned is what science is and also the fact that as a scientist, you make a real difference. (Curie Head of Science)

This sense of 'students as scientists' rather than just 'doing science' was particularly strong at Studio Schools Curie and Franklin. Studio School Curie was referred to as a scientific establishment by members of the SLT when talking to prospective students and parents; a place where students were scientists who worked on real issues in science and technology:

> Curie Head of Science: No, it is real world there. I have to keep correcting my Head [of school] because when our Head came in, he kept saying, "It's so great to have a real context." I totally disagree-
>
> Interviewer: It is real context.
>
> Curie Head of Science -real. It's not real context. It's real. It's not a context, it's real. I think that's where from talking to teachers from other Studio Schools, that a lot of them haven't grasped. They still think they're in a school using a context. They aren't, they're real.

At Studio School Franklin, while a less embedded approach was followed, there was a similar emphasis on providing students with the sense of being scientists and engineers through the mechanism of dedicated time (up to 6 months of the year) to work on a specific

project aimed to tackle 'big questions' in science and engineering.[92] This approach towards developing student engagement was appreciated by all members of the SLT and the sponsors of the school. They indicated that this was an approach that would not have been met with support at any of the other secondary provision they had worked at previously:

> The opportunity to work on more research related projects in science is part of the student's every day and we mentor them through solving real problems; something I did not get the full support of at [my previous] school. (Franklin Head of Science)

It is worth noting that all the approaches outlined above are elements of working on the development of students' STEM identities[93] (particularly through the project-based learning encouraged at all the schools) and increasing their science (STEM) capital[94]. These ideas of increasing students' science capital (STEM capital) and building STEM identities for the students to aid in student engagement and future trajectories in science and engineering will be discussed further below in Section 6.6. and in Chapter 8.

Besides building student engagement with science in school, a key factor in choosing a STEM specialism was the potential to work within the local community to increase awareness of and public engagement with STEM subjects and the career opportunities associated with them. Members of the SLT at three of the schools felt that it was their 'real duty' (Curie Head of Science) to work with the local community to create this awareness as

[92] As indicated in Chapter 5, Studio School Franklin, much like Studio School Curie was more explicit in their approach to shift to have students view themselves as scientists and engineers. It is important to remember that this was the entire ethos of Studio School Curie, where at Franklin it was slightly more tempered.
[93] This idea of building STEM identity to increase student engagement has been researched as part of the ASPIRES project at King's College London. It is grounded in an understanding that the lack of student engagement in school science is representative of the mismatch between 'popular representations of science, the manner in which it 'school science' is taught, and the aspirations of young students (Archer et al., 2010, p.618).
[94] To develop science capital (knowledge, resources and understanding), a broader approach to teaching science (STEM) has been encouraged which grounds science in what makes sense to the students' interests, can link to a local context. It has been demonstrated that this approach can help teachers reach out beyond the 'confident high-flyers' (Archer et al., 2016) and make science more accessible to al. This in turn helps students see themselves as having careers as scientists and engineers.

it was fundamentally important to the way in which the world now operated (Sagan Principal). For Studio School DeGrasse, the SLT felt that it was particularly important to discuss with the parents in the local community the notion of what STEM subjects were, and what they translated into in terms of career prospects (DeGrasse School Manager). These interviewees felt that if by being in the community they were able to get even a few more people (parents and students alike) engaging with the STEM subjects – even if it was just to enhance their basic understanding of what STEM means (DeGrasse School Manager) – then they would have accomplished at least part of their goals. At Studio School Curie, the SLT felt that the school had a 'duty to the community to be its academic centre' (Curie Head of School), helping the community at large engage with science and technology in a more meaningful manner, and encouraging the students at the school to work on real issues that would help the community and the worlds' needs.

Having an aspirational offer such as STEM is inexorably linked with a successful mechanism for recruitment which will be discussed further in the section below.

6.4 An aspirational mechanism for recruitment

This conceptualisation of STEM as a marketing tool (also identified by the creators for the Studio School model – see Section 4.4), served a dual purpose. Senior leaders and sponsors found that it was not only easier to get students and parents through the door, but also that they were having fewer issues with recruiting staff to a new model of schooling than they had expected.

The SLT and sponsors across all four schools were explicit that the marketability of STEM qualifications, and the ease of recruitment that came with being under the STEM banner, was a major draw in choosing those qualifications for the schools:

> Now, our CEO actually worked in a previous school many years ago where they had a space centre. That was a real draw for the students. For those who were very science-based, absolutely loved it. Really, he came up with the initial idea of, "Let's make it space-based." (Sagan Sponsor)

The school leaders and sponsors felt that there was an 'increased status of STEM subjects' (Curie Sponsor) amongst parents and young people alike; this created a shared understanding amongst the schools that emphasising STEM subjects provided an advantage over other secondary provision when marketing the Studio School model to the local communities. However, as identified by the interviewees, even under that banner of STEM, there seemed to be a measure of some qualifications being held in higher esteem than others by parents and students alike. The leaders also highlighted that there was a sense in the local communities that some STEM qualifications would lead to more lucrative outcomes versus others. Moreover, these perceptions served as key factors in the schools deciding on which qualifications to offer. For example, the qualifications needed to lead to careers in 'more than construction' (DeGrasse Principal) as construction-related jobs seemed to hold a negative connotation with parents. The leadership across all four Studio Schools found that the STEM qualifications had to be something like engineering as parents 'understand engineering, sort of, but they perceive it in a more favourable light' (DeGrasse Manager).

There was a recognition amongst the four schools that while most people did not really understand what 'STEM' meant (DeGrasse Sponsor 2), it was a concept that sounded attractive to parents and students alike (Sagan Principal):

> Sagan Principal – Obviously, it's attractive to some young people isn't it? The idea of –
>
> Interviewer – Studying in a space school?
>
> Sagan Principal – Yes.

Another key understanding of note across the schools was that the qualification choice had to be 'just right' (DeGrasse Vice Principal), to be a successful marketing tool without being 'gimmicky' (Sagan Principal). STEM as a concept proved easy to sell to parents (DeGrasse Sponsor 1); the specialism within STEM needed to be one that would resonate with the local community to gain traction not only with the parents and students, but also to ensure meaningful employer engagement, and STEM as a broad concept resonated with all the communities in this study. This was alluded to strongly by all members of the SLT at Studio School DeGrasse in particular, as they were the newest school in the study. The SLT noted that the term STEM was 'easy to sell' (DeGrasse Sponsor 1) to the local parents, but still required explaining to some parents. The sponsors of the school also emphasised the above discussed notions that it was important to have a broad categorization such as STEM, rather than a niche specialism when marketing a new school, as it provided an umbrella term under which many qualifications (in this case engineering) would fall, and allowed for greater links to industry – this reasoning was applied beyond STEM to ensure sustainability of an innovative school model:

> if you took some broad categories like STEM, like the creative arts, like service industries, perhaps, is another one, hospitality, catering, event management, all that sort of stuff. I think if you had some broad categories, then I think 14+ centres specializing on those with the industries that they're trying to serve are good models. (DeGrasse Sponsor 1)

The sponsors of at Studio School DeGrasse further elaborated: it was important to have specialisms that would have a general enough recognition and understanding that students and parents would feel comfortable in taking a risk with it at a new school. The 'sustainability of a school' (Franklin Sponsor) was more likely if a generalist approach such as STEM was adopted, rather than specific such as 'the catering industry or art' (DeGrasse Employer Sponsor).

This idea for the need of a categorization for effective marketing also resonated with members of the SLT at Studio School Sagan; the school itself was going through a re-branding exercise to move away from what the SLT and school sponsors now perceived as too narrow a specialism (Space) to a broader STEM focus in order to 'involve a whole series of other industries' (Sagan Principal). The Head of School and Campus Principal, in particular, felt that Space as a theme was too niche to be able to 'sell' to parents and students beyond a small, select number and that they were excluding a vast percentage of the population by being too specialised in their offer, and hence marketing.

Furthermore, it was intimated that the STEM banner combined with the Studio School model was a tool for recruiting not just employers, parents, and students, but was effective in the recruitment of science staff. The SLT across the four schools believed that teachers across the STEM subjects were joining them because they felt 'they would get the space to incorporate science research into their teaching unlike at other schools' (Franklin Head of Science), or those who 'were fed up of schools where they've got 30% of their kids really don't like science at all. I've plucked a number there, but you get my point' (Curie Vice Principal):

> Such as we find it easier to recruit staff because people think, "It focuses on space, science, maths and engineering."….. We don't have a problem recruiting staff, which lots of schools do. (Franklin Principal)

6.5 An interplay of policy and purpose

In Chapter 4, the architects of the Studio School model had highlighted their understanding of why they believed such a large number of Studio Schools in the network (over 75%) had chosen to adopt STEM specialisms:

1) STEM subjects could be viewed as an aspirational pathway for parents and students alike;

2) STEM as a concept was an effective marketing tool; and

3) by adopting a STEM agenda, the schools were responding to a national skills shortage crisis.

It would have been easy to assume that the main influence in the high prevalence of STEM-focused Studio Schools, was that the individual schools had (much like UTCs) chosen to respond to national policy on the need for STEM skills. Indeed, this was the only national policy influence that the architects of this model highlighted. However, as this chapter has shown, there was a disconnect with the top-level narrative provided by the Trustees and the individual schools implementing the model. Where the SLTs at the Studio Schools did in fact cite a desire to meet the skills need for the economy as outlined in key STEM policies over the years, they were also seemingly responding to elements of STEM education policy that tend to be less emphasised. For example, the Studio Schools in this study were united in their desire to increase public understanding of and engagement with STEM subjects and careers, something that has been part of the STEM agenda since the Roberts Review in 2002 but has not been emphasised or pursued to as great a degree as the narrative on the shortage of STEM skills. The senior leaders and sponsors across the four schools were also keen to challenge the lack of emphasis on practical science that had been brought in due to policy changes in assessment, by ensuring that the students spent large amounts of their time focused on practical work in science either via projects or employer experience; they were united in their belief that this would give students a better sense of what it meant to be a scientist or engineer.

As Section 2.4.1 also highlighted, political discourse has also placed the blame for a country's lack of innovation (and in turn lack of availability of required STEM skills) on the doors of the way science is taught in schools. And yet, it is politicking itself that has shifted

the way STEM education is approached in schools as far from real life (see Sections 2.2.3 and 2.4 for an understanding of the shifts away from practical learning, lack of emphasis on employability, reduced subject choices). The schools in this study had chosen STEM specialisms as they had wanted to play a big part in increasing student engagement with STEM subjects by serving as standalone institutions that challenged the traditional approach to the delivery of STEM education.

The issue of students' engagement with STEM subjects has been a topic of enduring interest in the STEM education community for many decades. There is a large body of evidence (Jenkins & Nelson, 2005; Osborne & Collins,2010, for example) that shows that compared to other school subjects, science (and by extension, STEM subjects can fail to engage young people. The leaders of the schools in this study sought to challenge these issues of disengagement from science (STEM) by utilising techniques that would build science capital for students (Archer et al., 2010), something which they felt was left by the wayside in most secondary provision. These leaders and their approach to STEM delivery challenged the manner in which students in secondary provision 'do science' rather than 'be scientists', which arguably responds to the call for a new vision of science education (Archer et al., 2010, DeWitt et al., 2016). For example, Osborne and Dillon (2008, p.15) argued for a vision that was not only about 'what we know and how we know, but also what kinds of careers science affords…. And why those careers are personally fulfilling, worthwhile, and rewarding'. It was this approach to STEM education with its emphasis on finding means to not only reengage students, but to truly provide them an understanding of being scientists and engineers that was considered as a highly desirable feature of the schools by the teachers who were part of the SLTs. In turn this meant that the schools did not face the same issues of recruitment of STEM teachers as other secondary schools. Although the

school leaders and sponsors were congnizant that this approach did not directly facilitate a pipeline of scientists and engineers, they were united in the belief that they would have at the very least, provided their students with a realistic picture of STEM subjects and their related careers.

Most of the interviewees at the four Studio Schools also sought to increase a general awareness of STEM in society. They tried to increase this understanding by engaging with all parents and students (not just the students who came to the Studio Schools) through open evenings, speaker events that were open to all, and showcasing community projects that involved the students building benches for their school or designing items for their local communities. More recent research has highlighted the importance of this community level engagement, as parents' perceptions of engineering and technology careers, for example, still show gaps in knowledge, with 'more than one in five parents feeling unable to support their child should they ask for advice about careers in the fields' (IET,2019).

Moreover, these Studio Schools sought to challenge the silo-ing of STEM subjects in schools, as aspects of the STEM Cohesion Programme Final Report advocated (Department for Education, 2011). The school leaders also argued that in too many schools STEM is not delivered as a single set of cohesive curriculum areas, but rather via individual subjects or initiatives such as science and engineering clubs, something that has been demonstrated in research as well (Mannion & Coldwell, 2008). This disjointed approach has resulted in a lack of effectiveness of STEM initiatives (National Audit Office, 2018), and also in certain subjects (such as design and technology) being side-lined (See Section 2.2.3) in secondary education. The Studio Schools in this study were actively choosing to have a more implicit and integrated deployment of STEM topics across the curriculum; an approach that the school leaders hoped would help prepare students for a labour market that was ever changing and

increasingly interdisciplinary, requiring a synthesis of understanding from multiple STEM disciplines. As the Principal of Studio School Curie stated, 'wouldn't it be great if I could offer my students a qualification in Biophysics?', fully acknowledging that while the constraints of subject offerings prevented him from doing so, at the very least, his school could provide an integrated approach to STEM through project-based learning and employer opportunities. Arguably, Studio Schools Curie and Franklin were even more forward thinking in their approaches compared to Studio Schools DeGrasse and Sagan. By trying to offer as broad a curriculum as possible with the STEM subjects integrated coherently across this broad curriculum, it is posited that the schools were perhaps attempting prepare students to take on society's big new challenges. There is an argument that a siloed focus on STEM has produced an environment where technological platforms and products are developed in isolation from the broader effects they have on society, and in response there has been a call for a broader, more holistic approach to STEM education (one encompassing the humanities and social sciences) so that advancements from STEM are framed by and come with a better societal understanding (Baker, 2019).

The lack of attention paid to certain subjects that fall under the STEM umbrella prompted the leaders and sponsors of the STEM – focused Studio Schools in this study to ensure that these subjects, with little voice elsewhere, became an important part of the STEM offer in the Studio Schools. This was also important as by offering courses that went beyond science and mathematics, the Studio Schools were allowing students to engage with STEM in a manner that might be more interesting to them and showcasing that there were ways into STEM careers that went beyond GCSE and A-level science and mathematics.

The Studio Schools in this study found that having STEM-based specialisms proved particularly effective as a marketing tool for both students and staff alike. STEM subjects

were also highly regarded in the schools' local community, making for an aspirational narrative for the schools. This finding aligns with the thinking that was detailed in Chapter 4 from the Trustees of the Studio School model.

While the Studio Schools addressed various debates in STEM education, all attempts were constrained by cost and accountability measures. The Studio Schools were set up to function as small schools and therefore had smaller budgets than most secondary schools. The school leaders and sponsors were cognizant that in an ever-tightening funding environment where funding follows the pupil, schools would not be able to provide all the resources or qualifications they wanted. Combined with an ever-changing accountability system the schools were finding it increasingly hard to deliver the STEM offer they actually wanted. In Chapter 4 (Section 4.5), the architects of the Studio School model referred to the complications that they believed individual Studio Schools would face when trying to implement all the elements of the Studio School model. One of these was ever-stricter accountability mechanisms as importantly, the accountability mechanisms challenged one of the core tenets of the Studio School model. While there was intended to be a close link between specialisms offered and the needs of the labour market, the school leaders and sponsorsfound that the Studio School model struggled to be implemented in its full true form due to the constraints imposed by the education market the schools were set up in.

6.6 Chapter Summary

This chapter sought to understand the *key factors that have influenced Studio Schools to have a STEM specialism* from the perspective of the SLT and sponsors the Studio Schools in this study. This chapter has highlighted that the SLT and sponsors at the four Studio Schools were not only wanting to engage with key debates surrounding the delivery of STEM

education but also wanted to challenge policy emphasis and influence on the design and delivery of STEM education in schools.

Where the various reasons for wanting to have STEM specialisms have been highlighted, it is also important to observe that the school leaders and sponsors were cognizant that they were functioning in a context where students chose to attend a Studio School for a variety of reasons (see Section 5.5), signalling that they were aware that their role would pivot in various ways. How this choice of specialism and other contextual factors have contributed to the role of the Studio Schools in practice has been explored next in Chapter 7.

CHAPTER 7 – The role of the Studio Schools in practice

Studio Schools clearly play a role in their local communities and within the wider landscape of English education. In Chapter 4, the intended roles of Studio Schools were introduced and explored in depth from the perspective of the architects of the school model. Yet, as presented in Chapter 5, the reality of the deployment of the various elements of the Studio School model was sometimes very different to that intention, with changes driven by the complexities of navigating competing policies in English education and the realities of establishing a school and enacting its vision. Chapter 6 explored the rationale for the choice of STEM specialisms in the Studio Schools (as narrated by the senior leadership of the individual schools), while starting to build a nascent understanding of the role that the SLT wanted their schools to play in their localities, and more widely. This chapter therefore seeks to examine the many questions that arose in the previous chapters concerning the role (and how that role may have been shaped by the choice of specialism) that Studio Schools were actually playing in not only their local communities but also in wider education. By seeking answers to these questions, this chapter addresses the research question:

What role do Studio Schools play in the educational landscape and how does the adoption of a STEM specialism have an impact on this role?

The previous chapter presented the perspectives of the senior leadership across the Studio Schools to determine the factors that influenced the decision to adopt a STEM specialism in the schools. In this chapter, the analysis has been broadened to present a whole school narrative. Interview data from all the different groups of stakeholders: staff

(including senior leadership),[95], sponsors, governors, students, and employers were analysed, treating each group of interviewees as 'policy narrators'. This allowed for the creation of an understanding (Appendix E) from each group of stakeholders of what they believed the role of their particular Studio School was, and what they believed the schools' wider role in education to be. All these different groups of stakeholders were treated as policy narrators[96] as it was assumed that their own interpretation and understanding of the role of the Studio School model would have had an impact on its enactment within the school. This arguably builds a more robust understanding of how the role of the schools has been interpreted by the many diverse voices in the Studio Schools. The whole school narratives were then cross- analysed across the four case study schools to form the discussion in this chapter.

In Chapter 4, it became obvious that the creators of the Studio School had created a model and brand that was complex and messy; a model that was seemingly created to respond to different, sometimes competing policies and policy rhetoric and narratives. The different roles outlined by the architects had been endorsed in different ways by policymakers and the architects of the model itself (see Section 4.3), painting a confused picture as to what role this model of schooling was actually meant to play in secondary education. Before their launch, the schools had been endorsed and promoted for their role of reengagement, and yet at launch, the schools were advocated for their role as a key

[95] It is important to note that staff includes those who serves on the senior leadership team as well. This had to be done as given the small size of the schools, staff wore many hats. Studio School DeGrasse, for example, had 7 staff, where the Principal also taught Biology. At Studio School Sagan, one of the employer partners served as Computing teacher. Similarly, some of the employer partners were also sponsors of the school, making it impossible to separate all the groups of stakeholders neatly. The inherent dynamic nature of the staffing structures at the school made it important to capture all the voices at the school for the purposes of this chapter.

[96] As introduced in Chapter 3, policy narrators were responsible for the interpretation and joining up of policies to create an institutional narrative. For a more detailed understanding of policy narrators, please see Section 3.2.1.2.

provider of vocational and technical skills in national policies and discourse (Thorley, 2017, p.42, and see Section 4.3), without any overt consideration of its other envisioned roles. As a reminder (see Section 4.2), the Studio School model was originally envisaged as filling the many following roles:

1) An alternative model of learning to the mainstream model of education.
    i. A model that would help 'reengage the disengaged student'.
    ii. A model that would facilitate a credible choice for parents and students alike.
2) A model that would provide a 'meaningful link to the world of work'.
3) A model that could be a champion of vocational education.

What follows below is an exploration of the detailed narratives for the role of Studio Schools in practice, constructed from the diverse voices (senior leadership team, employers, governors, teachers, and students) from within the school that have been reconciled to create a narrative for the whole school.

7.1 Reinvention

This theme of reinvention as a role that was addressed by the majority of the interviewees across the four Studio Schools. This role of reinvention at the Studio Schools was one that was framed in the following five ways:

1) Studio Schools were a place where students were able to reinvent themselves as more serious students academically.
2) Studio Schools were a place where students could regain their sense of worth.
3) Studio Schools were a place for 'the outsiders' to reposition themselves as being part of the mainstream.

4) Studio Schools were a place for a reinvented approach to curriculum delivery.
5) Studio Schools were a place where teachers could reinvent themselves with regards to the delivery of secondary education.

These five inter-connected ways in which Studio Schools served as a place of reinvention are discussed in further detail below.

7.1.1 A place where students were able to reinvent and reposition themselves as serious students academically.

Moving to a Studio School was a mechanism by which students could reposition themselves as 'more serious' (DeGrasse Year 10 Student 1) students; these were students who felt like they had been left behind at their previous institutions because of low academic performance. The Studio Schools in this study provided students with the opportunity to take qualifications that they had not been able to access at their previous schools:

> A lot of the lads we've got, and it is mostly the lads I think have had this experience where they have struggled [academically] in school, probably messed up a bit because they were struggling, were bunged in courses like ASDAN and stuff like that, didn't do much, were bored, fed up. Actually, give them a car engine, take apart, give them something to build, they have got the skills, they just weren't…. taught. They weren't taught. No-one's ever really seemed to have drilled down and found what the root of the problem was… (DeGrasse SEN[97] staff)

A number of students (those in Year 10) across the four schools felt they had been written off at their previous schools for not having high enough anticipated grades for the GCSE, or for not being 'smart enough' (DeGrasse Year 10 Student 3). They had either felt like they had been 'ignored in class' (Franklin Year 10 Student1) or had not been given access to all qualification options based on their performance in previous years. For these students, Studio Schools provided the option to be enrolled in subjects that went beyond

[97] SEN stands for Special Education Needs.

qualifications such as ASDAN[98] ; these students intimated that they were encouraged to not only take vocational and employment focused qualifications but also GCSEs, having been provided with all options - something that they had not experienced at their previous schools. The schools also afforded these students a sense of support that if they wanted to access A-levels post-16, they could (again, something they never felt like they had had access to in their previous provision);

> Sagan Year 10 Student 2: What I'm aiming for in my A-levels is A* and things. I know that I have the support here. If I feel like I need help it's always there.
>
> Interviewer: Do you want to stay on and do your A-levels here?
>
> Sagan Year 10 Student 2**:** Yes, I definitely want to stay sixth form here. I think that would probably be the best option for me to get the grades I need.

Not only were these (and all students) students given the chance to access qualifications previously unavailable to them, as has been previously noted in Chapter 6, but they were also actively encouraged to think of themselves as more than just students. They were scientists and engineers, working to solve real problems through this innovative approach to the delivery of STEM education (as explored in Chapter 6). By building their STEM identity in this manner, the schools in this study challenged students to approach the STEM subjects differently than in their previous secondary schools, which had the effect of them starting to enjoy science more than they had before, and wanted to have access to those qualifications that had previously not been afforded to them:

> I don't really like science that much, so it's quite surprising that I'm here. I think it's more my friends moved here as well. I wanted to be with them. I came here and I began to enjoy it. It's good. (Sagan Year 10 Student 1)

[98] ASDAN (Awards Scheme Development and Accreditation Network) is an awarding body and charitable organisation that develops courses and qualifications. These qualifications are 'typically built around transferable skills and employability' (Harrison et al., 2015, p.586), and have been shown to promote student engagement and learning.

> My feeling if-- When you get a GCSE group. Our GCSE group mostly targeted Cs. They don't arrive in year 10 thinking of themselves as scientists. Once they think of themselves as scientists teaching them science is really easy [and in turn doing better at school] (Sagan Head of Science)

This sense of being taken more seriously academically is inextricably linked with building students' sense of self-worth, something that is explored in the next section.

7.1.2 A place where students could regain their sense of self worth

The students at the Studio Schools in this study found that the schools provided them with the opportunity to prove to themselves and to others that they were capable of being better learners than their previous schools had labelled them as being (Franklin Year 10 Student 2). This was not just about being given the opportunity to achieve more academically, it was also about contributing back to the school, in whatever small way possible.

> I enjoy having younger students [referring to Year 10s] in the school because we run [teach] some electives. I's nice because we can teach them stuff that we know and we can get stuff out of it as well [like learning how to teach and manage a class]. (Sagan Year 12 Student 2).

> Then, seeing them achieve and sit up just a bit straighter because they've done something and achieved something, it's not to do with the grade, it's not because they got 50 out of 50 in their Math test. It's nothing to do with that, it's contributions to us here. (Curie Lead Curriculum Coach)

This feeling of worth and subsequent repositioning of self-image and self-esteem was framed through the idea of treating all students like adults and instilling in them a sense of responsibility and 'ownership' (Franklin Physics Teacher) of their 'learning' (Curie Lead Curriculum Coach) and of their place within their school's community:

> Yes, try and keep mindful towards the idea of belonging and purpose and ownership. I think is one of the main things as well, students feel they take ownership. It does make a difference, small things like having the flight simulator upstairs, students using it, trying to update it, trying to make it better themselves and to always have the skills and ability to do that. (Franklin Physics teacher)

This was something that most students (Years 10 & 12) intimated they had not experienced before, giving them a sense of being respected, and making them feel as though they were being given the chance to prove themselves:

> Franklin Year 10 Student 1: In the old school, the way they taught you, it's just a bit like they're above you and you're below and everything, and you have to wait until next year. There's just a bit more respect from teacher to student [in this school].
>
> Interviewer: That's something you like [about the school]?
>
> Franklin Year 10 Student 1**:** Yes.

This respect was not only afforded from teacher to student and vice-versa, but students felt that there was a mutual respect that was encouraged amongst one another as well:

> Yeah, and the sixth formers listen to me as well. Like they respect me. So, it's not, another thing that's quite cool actually; we're all equal, the sixth formers aren't like, they all respect each other and respect us. (DeGrasse Year 10 Student 3)

This sense of respect and the idea of building 'empowerment' (Curie Head of Technology) was one that was noted and appreciated by students, staff, and employers alike as it instilled in the students a level of maturity that all the Studio Schools felt was missing at other secondary schools:

> You get a lot more independence, you know, in old schools, they would treat us like little kids. But here, they prepare you for the world already. They prepare you to grow up and everything. they give you a lot of freedom, but the freedom they give you to do whatever you want - it's a controlled freedom! They trust us to be in a room without making a mess, like in our old school they would never trust a group of children to stay in the room without a teacher. (DeGrasse Year 10 Student 1)

Across the four schools, students would regularly give tours of the schools to prospective students, parents and employers with a sense of pride and confidence (Curie Employer), and the very students who had struggled to be taken seriously at their previous schools were now presenting their work with undeterred enthusiasm:

> **Student:** Yeah, I'm proud. So, one of the opening evenings was for people to come in, to be partners with the school. So, there's lots of companies that came in, we [students] had to communicate with people we don't know. We built quite a few bonds between people, and caused them to partner with schools, and open up new opportunities. (DeGrasse Year 12 Student 2)

> **Employer:** but the energy and how they're treated like adults and how that changes the way they learn and all of that stuff. I guess it was typified when we had the official opening a few months back and they did some presentations, but also that the students presented themselves and just seeing the passion and enthusiasm for what they did. (Franklin Employer)

Interestingly, this sense of 'being treated like an adult' (DeGrasse Year 10 Student 3) and encouragement of a growth in maturity, was not something that necessarily appealed to all students who joined the Studio Schools. While all four Studio Schools had struggled with recruitment, it was interesting to see that in the case of those at Studio School Franklin in particular, students had actually left the Studio School to go back to a more mainstream secondary school, citing this expectation of maturity and empowerment as the reason:

> We have had two or three leave and go or not been able to take the bit of extra freedom and responsibility that come to it, so they just can't-- Some of them are really good students as in academically but find it[the freedom and expectations] very difficult (Franklin School support manager)

Where this section explored the idea of Studio Schools rebuilding students' sense of self-worth, the schools also served as home for those students who felt like outsiders or did not quite fit in mainstream schooling. This narrative will be explored in detail in the next sub-section.

7.1.3 A place for the 'outsider' to feel at home

The Studio Schools in this study offered a 'home' (Curie Lead Curriculum Coach) to those students who would not necessarily have fit into or felt comfortable within normal secondary schools: from those who had been home-schooled, those who had experienced

bullying, to those with special needs, and even to those who just felt like outsiders due to their interests in STEM specialisms:

> I think a place where loving maths and loving science doesn't exclude you from the social stream is important, because we're at the age where being able to fit in is important. ……I like the idea of a place where the environment aligns with the pupils' interest more easily, more naturally. They don't have to be given a special place away from everybody else, they don't have to be protected from people saying, "Why are you doing this?" Nobody asks that. (Sagan Employer and Computing Teacher)

> A lot of STEM-type students can be a bit geeky. I think they'd just get lost in a big school and then they'd become a late starter (Franklin Support Staff Manager)

> If you're seen as a nerd, you're not going to be the most popular person at school. That's going to affect your academic life as well as social. I think here it's more celebrated if you're good at maths and science, where other schools you're seen as a loser. (Sagan Year 10 Student 2)

The Studio School environment felt different to other schools; a space where everyone 'had a place' (Franklin Employer) something that the interviewees across the Studio Schools felt was missing from the marketplace of secondary provision. Studio Schools felt safe and even acted as a home for those students who were perhaps the most vulnerable (Curie Head of Schools):

> When I was back in year 8 and 9 I was having bullying troubles at my old school. They weren't doing anything about it. During lessons, it would be very, very disrupted. I had a lot of trouble trying to study, learn and whatnot. Then, we [parents and student] saw that the school was opening. We decided to go here instead. (Sagan Year 12 Student 2)

> There are quite a few people that have got bullied at their schools, and they've come here and found new friends - it's just such a nice environment. (DeGrasse Year 10 Student 3)

Having explored the idea of reinvention from the perspective of what it means for students at the Studio Schools, the next sub-sections focus on how the Studio Schools provided staff the opportunity to reposition themselves as well.

7.1.4 A place for the reinvention of the delivery of the curriculum

For all the key stakeholders (across the four schools) in this study, Studio Schools represented a place where the teaching of the specialisms 'transcended and moved into something away from the normal schools [subjects]' (Curie Head of Technology):

> It's very apparent at the moment that a lot of the pressures from government are towards a much more traditional inward facing curriculum. What the studio school has given us the opportunity to do is to reinvent, really step back, and create an outward facing curriculum, which is what I care about. (Curie Head of Science)

Many of the staff at the schools were on a journey to push the bounds of curriculum delivery away from one that was 'knowledge-based' to one that focused more on building a skillset (Sagan Head of School) that encompassed not only technical skills but also transferrable ones such as communication, collaboration and so on (see Section 7.3 below for further details) that the schools felt were necessary to equip students with for the future.

The schools in this study struggled to push the boundaries of their curricular offer as they were constrained by the requirements of the National Curriculum and the accountability framework (see Chapters 5 and 6). When considering the key ingredients (of the Studio School model) of project-based learning, all the schools had also at some point attempted to teach the entire academic curriculum through project-based learning, however, they had only achieved success in this to varying degrees. Staff at three of the four Studio Schools had managed to teach entirely through projects in their first year of opening but had subsequently found this approach unsustainable once student populations grew, and the requirements set by GCSE and A-level examinations became the reality for a

particular year group.[99] That said, there was still dedicated time in the school week to the running of projects where students would have the opportunity to link topics back to their curriculum (designed differently as described in Chapter 5). Despite the restraints on reinvention of curriculum delivery via project-based learning, staff at the schools took advantage of other key ingredients of the Studio School model to fashion a curriculum that at once felt both personalised and personal:

> …the principle purpose of any educational institution is not to measure them by a bunch of yardsticks, but is proactively to discover what is brilliant about every individual kid and let it flourish whilst also supporting all the basics. (Curie Head of School

The element of personalisation was facilitated by the opportunity for students to take courses at other schools and colleges if not available at the Studio School, work placements that were tailored to match student interests, and even the projects that students would work on:

> [The approach to the opportunities for students at the school] it has a lot more to do with what a student wants the school to be. (Franklin Lead English teacher)

Not only were the Studio Schools able to provide tailored opportunities to students but staff were also able to attend to students' personal needs (DeGrasse Year 12 Student 2) in part due to the longer class hours, but mostly due to the small class sizes. That said, all four schools had longer school days than the average secondary school which afforded staff the opportunity to have more interaction with the students than they normally would. As showcased in Chapter 5, all the Studio Schools had an extended school day that ran until

[99] The three schools are: Curie, Franklin, and Sagan. DeGrasse was in its first year of opening when the data for this thesis was collected. Before opening, the Headteacher and sponsors had spent some time learning from other Studio Schools in the network and had realised that teaching the entire curriculum through projects would be difficult to maintain and therefore did not try to do this from the moment they opened.

5PM, which provided for what was known as ‘independent study time’. This independent study was one where the staff and students could either work on understanding core concepts in a one-to-one manner, or students could work on their assigned tasks or projects, taking away the notion of ‘homework’. This level of personal interaction in teaching was one that was highlighted by most of the staff and students (across all four schools) as an exemplary feature of Studio Schools:

> Every single student you need to make contact with your students as a teacher or support staff. Ask how they are and listen to them when they answer. If they're not there, the next day find out." "Hey, you okay? Everything all right? You miss something, come see me." All this touching base and is very, very simple but to make people to feel included. If people don't feel included, they won't study very well. (Franklin School Support Manager)

> Since there's not many teachers I can actually go up to a teacher, as well as talk to them about my problems as well as instructions start to be much more open. (Sagan Year 12 Student 2)

Standard curriculum delivery was also challenged via the approach to the specialisms at these schools. As previously noted, all four schools attempted an approach to the teaching of STEM that would help to build the students’ STEM identities, which in turn helped with their engagement in and with their subjects (see Section 6.3 for more details). Examples of this integrated approach were also seen in relation to non-STEM courses and qualifications at two of the four schools in this study. For example, in Studio School Sagan, English and History teachers took advantage of the Virtual Reality Suite facilities available at the school to bring certain plays and historical texts to life:

> Our English teacher especially has a very strange way of teaching, but it works. Funny enough, in English you learn different things that don't have anything to do with English. It's like Core Projects, linking English with all our other subjects. (Franklin Year 10 Student 1)

Where this section has explored the key role of curriculum reinvention through the diverse

voices at the schools, the following section will explore how staff viewed the Studio Schools as a place to reengage with secondary education.

7.1.5 A chance for teachers to reposition themselves and reengage with secondary education

This is a role that the architects of the Studio School model had never articulated as one that they had wanted Studio Schools to play or had even foreseen that Studio Schools might play. For the architects of the model, the multiple potential roles envisioned for the Studio Schools had been framed only from the perspective of students. However, what has been articulated in this research is that Studio Schools afforded teachers the opportunity to reengage with a secondary education with which they were disenchanted:

> We're not providing an education which is in any way valid for the 21st century. There is a reliance on examination skills. There is a reliance on Victorian educational values. There is a reliance on handwriting which in this day and age is nonsensical. There is a reliance on testing which, again, I've worked for 26 years now, I've never ever had to do a test. It's nonsense. The whole system is utter nonsense so I want to change it. (Franklin Principal)

For the staff at the Studio Schools, it was an opportunity to experience not just a brand-new school, but a brand-new model of schooling entirely, and the chance of being part of something that was being built from the ground up.

Different elements of the Studio School model appealed to different staff; from being a place where teachers could explore and find expression for their passions in the STEM subjects (Franklin Biology teacher), to a small school environment where teachers could truly get to know the students (DeGrasse Head of STEAM). Students at the Studio Schools recognised the way in which teachers seemed to be 'different to their old [previous] schools' (DeGrasse Year 10 Student 3), such that the teachers not only seemed to care about the students a lot more (as alluded to in Section 7.1.4 and will be further discussed in

Section 7.5), but also seemed to be genuinely interested in the subject matter they were teaching and in the process of teaching itself:

> I think it's a good thing [the school] especially for the people who came here for the specialization because the teachers are really enthusiastic about that. (Franklin Year 12 Student 1)

What was starkly evident was that the majority of staff across the four schools had joined because they were disenchanted by the way they felt secondary education had changed for the worse as a result of years of policy changes and various educational reforms:

> I've had an opportunity, in part, to let go of a secondary education system that I've worked in for 21 years prior to being here, that I was really starting to lose faith in, because - especially having seen it significantly improve right up until 2010, and then catastrophically get torn apart. It really felt that there were major, major backward steps to the tune of maybe 50 or 60 years in education. (Curie Head of School)

The Studio School model, for them, was a path back into a 'way of teaching' (Curie Head of School) that they all wished for their own families (Sagan Sponsor 1; DeGrasse Business teacher); one that moved away from the constraints of only focusing on the development of academic abilities, but rather on the whole child (as discussed in the section above and further in Section 7.4)

Some of the teaching staff across the four schools had actually stepped away from the teaching profession entirely to pursue other interests, however, the Studio School model and its elements had enticed them back:

> The amount of bureaucracy in the classroom was outstanding, so I left teaching after two years, ……. And then, it was only this school that brought me back, because it was a chance to shape how the school ran from the word go. And also the idea of the freedoms and what we we're actually doing was quite appealing. (Franklin English teacher)

Even so, it was interesting to note that while staff had chosen Studio Schools as a means of reengaging with secondary education that they had become disenchanted with, most of them felt that the professional development opportunities that they received from the

Studio Schools Trust (it was the Trust that was open in 2016-17) had not adequately prepared them for this approach to schooling. That said, a few of the staff believed, for what felt like the first time in their careers, that their welfare was being taken seriously (Franklin Engineering teacher; Curie Lead Curriculum Coach; DeGrasse Maths Trainee teacher), and that their opinions and contributions were truly valued:

> I feel we've had a say in that and are listened to in that. You're asked your opinion and it's not just lip service to that, we've asked staff's opinion. (DeGrasse SEN staff)

This section has focused on the narrative of reinvention as a role for the Studio Schools in this study. The above sub-sections have demonstrated that the schools in this study were a home for those students who did not fit or were not taken seriously academically elsewhere. And yet, this role as a place of reinvention or redefinition is one that staff, employers and sponsors at the Studio Schools viewed as not the most desirable role for the schools, and that they wanted the schools to be known for more than that:

> You're going to get kids who feel vulnerable and let down by their current school, which isn't necessarily exactly what you want … It's difficult, because the only kids who have knocked on the door [so far] are looking to be known better, basically. Which I don't have a problem with, but I do see that it isn't the be all, the end all. (Curie Head of School)

This is an important finding, as previous governments[100] (New Labour, 2005-2010) and the architects of the Studio School model had branded this role as one of the key roles of this new model of school, despite wanting to, at the same time, serve other roles. For staff at the Studio Schools, this idea of reinvention from the perspective of students was recognised as being important; however, it was also viewed as a double-edged sword. While staff were cognizant that this role had been built into their model of schooling, and that it was an

[100] As described in Chapter 4, the New Labour government had advocated for the Studio School model to serve as a 'halfway house to alternative provision'. Please see Section 4.6, pp. 146-150 for more details.

imperative role for someone to play in education, they were also very aware of the reputation they were in danger of gaining within the context of their MATs and local communities. The Studio Schools were frequently referred to as the schools 'for naughty kids' (Franklin Employer) or the schools that were 'for other peoples' kids (DeGrasse SEN staff). Although the model was of benefit to the students, and provided a place for them to thrive, it's role of reengagement that was (in part) giving most of the schools a reputation as a 'sink school':

> I think when we opened, the surrounding schools saw it as an opportunity to encourage some of those students to move to us to ease their lives. I think it's going to take a number of years before the reputation of us being the sink school where the troublesome student go is overcome. (DeGrasse Vice Principal)

However, this understanding sat in direct contrast to how the students viewed the schools. An unexpected finding that is worth highlighting is one that was expressed by a few students across the four schools. Where staff felt that they were being branded as 'sink schools', for a majority of the students at the schools, being at a Studio School seemed to be the superior offer; one that provided them with the opportunity for a good education and to mature. They viewed students at other schools as those 'who [couldn't be] arsed with school' (DeGrasse Year 10 Student 3) and were not looking to make an improvement in themselves (Franklin Year 12 Student 1):

> I sound really snobby but they're [an] academy (referring to previous secondary school), that's what's been attached to a lot of failing schools. A school like this is meant to be of higher [quality]. I don't want to be associated with failing schools. I don't like it when we have to go over there and they don't have the best work ethic over there and things like that……I don't want to have to mix with the kids that don't care about their education. (Sagan Year 10 Student 1)

The next section will explore the role of the Studio Schools in raising the aspirations of their students and local communities.

7.2 Raising aspiration

The architects of the Studio Schools model had envisioned individual Studio Schools combining academic and vocational qualifications to prepare students for entry into work. They had also articulated that Studio Schools would need to create aspirational narratives for themselves to counter the perception of vocational qualifications as non-aspirational. As seen from Chapters 5 and 6, the Studio Schools in this study had not made a deliberate effort to always offer a combination of vocational and academic qualifications if it did not make sense for their local area and needs thereby rejecting their role as being a champion of vocational education.

And yet, the narrative of aspiration persisted at the schools. STEM was the mechanism by which the Studio Schools had fashioned their role of raising aspirations not just for their students but for their local communities, and by extension in wider education. As introduced in Section 6.4, students (and parents in the community) viewed STEM subjects as 'aspirational', and so the staff across all the Studio Schools aimed to fashion the schools into something that felt like 'a selective school, by being a STEM school' (DeGrasse Principal). Staff and leaders wanted the schools to be a place that encouraged their children to 'get a really good job in a 'STEM-related industry'', emphasising that students would find a way into jobs that were better than what existed in the local community. (DeGrasse Principal).

Three of the four Studio Schools in this study were in areas of high deprivation, with the local population holding mostly low-level qualifications (see Chapter 5) and this narrative shows that the staff in the four Studio Schools in this study aimed to provide students with more than they had previously experienced; to be more than 'what they know' (Franklin Principal) from their local communities:

> I see this very much as upscaling the local populace, giving them huge, huge scope for the future, better earnings. (Franklin Employer)

This was a role that was recognised not just by the staff and employers at the Studio Schools, but by the majority of students at the schools as well;

> In other schools tends to be, going out, working at Tesco's or something. Whereas they want to avoid us falling into jobs like that, I think. (Sagan Year 10 Student 2)

By aiming to serve as aspirational scientific beacons in their local communities (see Sections 6.3- 6.4), communities that were described as deprived (See Chapter 5), the Studio Schools were also seemingly responding to lesser emphasised policy discourse that has called for more diverse groups of students having access to STEM subjects and careers (see Roberts Review, 2002) (including but not limited to ethnic minorities, gender, socio-economic status) , and idea that will be returned to in Chapter 8.

7.3 Pathways to successful careers in STEM

Studio Schools were not just the place that would equip students with the skills to work in diverse and wide-ranging STEM careers; Studio Schools were the place that students could attend to truly be successful in their chosen STEM sectors and careers:

> Franklin Principal**:** ….gives them [students] something else. I quite like the line that one of our -- He was on the steering group and he was a teacher. He used to say, "We're not just training people to work at [airport X]. We're training people to run [airport X]."

Staff at the Studio Schools positioned the schools as institutions where students, would gain the knowledge and skills required to go on to careers as scientists and engineers who would solve the world's most pressing issues (Franklin Vice Principal):

> New industries and new technologies will exist because of **these** [emphasis added] young people coming through in the future. It becomes both a shorter medium-term thing, but also a longer-term thing in terms of getting these kids enjoying learning and enjoying technology, and hopefully developing, and doing longer-term research as well. (Curie Head of Technology)

> I think [the purpose of the school is to create] students who exist to help people believe that they can be part of the creation of the future, not just consumers of it. (Sagan Principal)

By providing access to work experience opportunities, access to career fairs, visits to companies, talks from inspirational speakers, and through their choice of the specific qualifications to be studied, the schools were a space for students to explore a variety of aspirational career choices. Most students across all four schools, in both Years 10 and 12 had high expectations for the careers that they wanted to pursue and believed that the Studio Schools provided the means to get them there:

> I'm very interested in terms of nuclear fusion, in terms of providing renewable green energy for the future which is why I think I wanted to go to this school… I want to do engineering first. I think what I really need to do is get my A Levels and getting the A's and B's I need to go to university and study engineering [to then focus on renewable energy]. (Sagan Year 12 Student 1)

This narrative was driven in part, by the fact that STEM specialisms were viewed as being a route to lucrative careers (See Section 6.4 for more detail). Most of the students across the Studio Schools believed that their institution was providing them with the resources they believed were necessary to achieve their aspirational goals, as evidenced, by example, by Student 3 (Year 12) at Studio School DeGrasse:

> **Interviewer:** Sorry, so coming back to mental health nursing do you think this school is preparing you for that?
>
> **Interviewee:** Yes. I always do lots of lessons with my psychology teacher, not just normal lessons we always do [extra lessons] in independent study as well because, I finished the course before everyone else… I always do extra stuff in psychology with my teacher… They also help us with our course applications. We have citizenship lessons, [and sometimes] we don't learn about citizenship, we do personal statements to help us out in the future.

The framing of this narrative, however, is one that stands in contrast to the concerns that the schools had to address through their role of reinvention. As alluded to in Section 7.1

above, a large majority of the students who joined Studio Schools in Year 10, for example, were those looking to still find their place or had not done as well academically in their previous institutions. These were students who, for example, had been identified as needing to play catch-up in basic literacy and numeracy skills for their age (for example, Studio School DeGrasse Year 10 students) before they could even engage with the STEM curriculum at the school. In Studio School Curie for example, the students who joined in Year 10 tended to be more 'vulnerable' (Curie Lead Curriculum Coach), and more in need of the pastoral care than necessarily focusing on becoming a scientist or engineer. It is worth noting that the staff and senior leadership at the Studio Schools in this study possessed the self-awareness to recognise and acknowledge that even though they were positioning themselves as specialised STEM schools, student destinations may not be as high reaching as this narrative would indicate. It is also worth noting that there was some evidence of this more nuanced understanding of this role as a gateway to a better career:

> Well, I put this into words and I wasn't told it was wrong. This is a small school that is promoting STEM subjects and allows students to have the time to work on projects and to develop the skills necessary, and the contacts necessary to go into a job with training or to a high apprenticeship. Then maybe get companies that pay for them to go through university rather than going the academic route where they pay themselves. (Curie Head of Science)

Interestingly, this nuanced understanding of this role was not one that was shared by the students across the schools. For the students across all four schools, the Studio Schools were representative of a route to a high-flying career in STEM, and nothing less.

Staff at the Studio Schools however, wanted to position the schools to be known for this narrative as much (if not more) than their role of reinvention. This was particularly evident at Studio School DeGrasse which was in its first year of opening and had at Year 10 attracted a cohort of students who were mostly looking to make a fresh start at the school.

That said, senior leaders and staff were hopeful of moving on to more of a focus on the development of STEM skills as the school grew, and gain more students, as had happened in Studio School Franklin, for example, which was almost at full capacity:

> Now, when you take a quarter of your students in any year group that have some sort of issues, either being emotional behaviour or learning issues and I think that stands in the way of accomplishing our goals as a STEM school. However, with it being so small, we're trying very hard and we seem to get in there, but I think it's slower than what we would have envisioned to begin with. (DeGrasse Vice Principal)

Where the above sections (7.2-7.3) have explored the role of the school through its more aspiration-related narratives, the next section will look at the role of Studio Schools as places where students were prepared for life. The above three sections (7.1-7.3) have highlighted the tension between the different roles that the Studio Schools were playing, similar to the tension that was seen when the architects of the model had observed when they had attempted to market the model.

7.4 Preparation for life

Most interviewees (particularly, the staff, sponsors, and employers) in this study believed that secondary provision had lost sight of the true purpose of education, becoming too narrowly focused on only academic measures, and that it was part of the Studio Schools' remit to help provide an education that would develop the whole child, rather than just an academically able student. For the staff and employers involved with these Studio Schools, mainstream secondary schooling left students 'wholly unprepared' (Sagan Head of Science) for the world of work, and life, more broadly:

> Kids coming out of education now, and funny enough maybe especially from a university, do not have the life skills and do not have the communication skills, do not have the wherewithal to suddenly fit into business. It's a huge step in my view. I think what a [Studio School] does is it

> fills a great hole, a great void it fills in there (DeGrasse Employer partner and School Governor)

> **Interviewer:** what role do you actually see this school playing for the students that come through the door?
>
> **Franklin School Manager:** Development. Just development for life

The Studio Schools in this study focused not only on delivering the specialisms, but also on the development of employability skills, character skills, and even preparing them for a changing world driven by technological advances:

> The point of this school is to teach what's not taught in a very pared down conventional mainstream school. A mainstream school's entire focus is curriculum, but that's not creating a full student. That's not creating a holistic student. (Franklin Lead English teacher)

The Studio Schools in this study sought to be the place that would focus on building character traits such as confidence, resilience, and instill a sense of maturity that they felt students did not normally acquire at other secondary schools. Creating this 'adult atmosphere' (Franklin Employer) was one that served a dual purpose; it helped build self-esteem and a sense of worth in students (see Section 7.1.2) and prepared them for life and interactions outside of school; something that the students at the Studio Schools recognised as well:

> Coz' I guess there's quite a lot of people that don't really want to, that can't be. So, they're going to, like, not succeed in life. So, if you want to succeed [in life], you can come to these schools, rather than being pulled down by those other people that don't want to mature. (Degrasse Year 10 Student 3)

The staff, employers and students were united in their belief that the combination of the academic curriculum, the emphasis on work, and learning how to balance the various responsibilities that students were given around the school, was completely 'character-building' (DeGrasse Employer).

An interesting way in which this 'preparation for life' was framed was through the offer of STEM specialisms across all four Studio Schools. There was an acknowledgement that the world was changing at a pace and in a manner that would require an understanding of STEM subjects:

> And the second thing I think is the use of technology since it's right now is the 21st century and technology is a vital part of the society, and by knowing the technology as was given, learned of all their proper uses it's helping us with our study as well as our social lives. (Sagan Year 12 Student 1)

STEM was a 'fundamental part of what we know and how we operate' (DeGrasse Principal) and that by providing students with the opportunity to study STEM qualifications, the schools were a place where students would be better prepared for an increasingly technologically driven life:

> I think it's very important, just in the way we live our lives today. Even in the most basic of job descriptions now, there's such a focus on your math ability, the whole employability thing with computers and that. Computers, art, engineering. Everything seems to have a bit of it now. (DeGrasse Maths trainee teacher)

As evidenced in Chapter 6, one of the driving factors for the offer of STEM specialisms was the desire to build community awareness and an increased understanding of STEM. By preparing students for the changing nature of work and life (driven by STEM sectors and technologies), the educational approach in the Studio Schools was also increasing awareness of the impact of STEM in their local communities, as these students would not only join the local workforces but would be part of the local community as well:

> Most of industry is revolved around STEM. With the engineering side, if you know how to fix something, that comes in handy as well as understanding the world around you and just being able to, stuff like that is very helpful. Of course, they open up a lot of - Like I said, most jobs require you to have a basic understanding of STEM. (Sagan Year 12 Student 2)

Preparing young people for work had the strongest emphasis in the schools and the development of key employability skills was considered a central function within various activities such as curriculum delivery, projects, and particularly the work experience offers that the schools had designed:

> Whereas in a studio school, and the same thing will apply to a UTC, this is it. We are making them ready for work, the working hours, the dress code, the involvement with adults on a regular basis, with the employers coming in all the time. We want to get them ready for work, and coaching and mentoring is part of that process. That's unique. You won't get that in a secondary school. (DeGrasse Sponsor)

> Other schools just want you to learn and have good grades and stuff, but here they want to get us ready for the workplace as well. (DeGrasse Year 10 Student 3)

Individual Studio Schools were expected to develop employability skills using an employability framework known as CREATE (explored in Chapters 2 and 4).[101] While this thesis has not sought to understand the implementation of the CREATE employability framework and subsequent development of employability skills that stemmed from it in detail,[102] a key finding was that employability skills and the use of a framework (CREATE or other) was indeed one important way in which all these Studio Schools could market themselves as a unique offer in their local communities:

> I suppose, that's our key selling point. Our students will be employable when they leave and they know the type of standards. They know what's expected of them and they worked in that environment before. That's their key. They'll be well educated as well. Do you know what I mean? That's the beauty of the school (DeGrasse Maths Trainee teacher)

[101] CREATE – Communication, Relating to People, Enterprise, Applied Thinking, and Emotional Intelligence, was the employability framework that was developed by the architects of the Studio School model, and was meant to sit at the heart of individual Studio Schools' activities and working.
[102] For a detailed understanding of the implementation of the CREATE employability skills framework in Studio Schools, see Robson et al. (2018).

Indeed, development of employability skills proved to be a popular selling point for all the students interviewed in this study, often citing it as a reason for having chosen to study at the Studio Schools:

> It's the fact that the schools work with companies as well. Which makes you very employable when you put it on your CV. (Franklin Year 12 Student2)

The staff at the schools were also keen on modelling behaviours that they felt would be important for students to learn in preparation for when they entered the workplace. Where they felt it was important to develop and measure the development of transferrable employability skills, it was also equally important for the students to learn how to behave in the workplace. One way to illustrate this is to consider the way the use of vertical tutor groups was framed at two of the schools (Studio Schools Curie and DeGrasse);[103] they were used to simulate an environment that staff believed would be seen in the workplace with different levels of expertise and experience all around. Having students work in mixed age and experience groups it promoted a sense of 'teaching us to get along with each other, and even if we don't like everyone, we still have to get along' (Degrasse Year 12 Student 2):

> Of course, that's totally brilliant because if you've got [Year]10's rocking up next to [Year]13's. The 13's are applying for jobs, they're going to university, they're passing driving tests, but 10's are still talking about what's happening on their phones and WhatsApp, completely brilliant.
>
> It's not just experimental, I think in lots of schools, years ago, and actually what they've realized is, that thing should work, because that's the way we work when we go to work. (Curie Lead Curriculum Coach)

> **Interviewer:** What do you feel prepared for?
>
> **DeGrasse Year 12 Student 3:** Just leaving school. I never knew before coming here that I was so scared about leaving school because I didn't know

[103] Vertical tutor groups at the schools meant that students from Years 10, 11, 12, and 13 were all in the same tutor group.

> what I was going to do or anything. But now I pretty much have my heart set on going to uni.

Where this section has focused on the narrative of the Studio Schools being a place where you were equipped with the skills needed for life, the next section focuses on another pastoral narrative of the role that the Studio Schools in this study played in practice.

7.5 A feeling of community

Importantly, the Studio Schools were a place when one could sense a feeling of community, a 'family feel' (Sagan Year 10 Student 1) that students and staff alike had not experienced in their previous secondary provisions. In fact, this feeling extended to the employers and all who engaged with the Studio School. This was a set of schools where the school environment felt both personalised and personal to staff, sponsors, employer partners, and students alike. The Studio Schools were a place where there was a sense of community spirit that was found in primary education, but had gotten lost in secondary education, could be found once again.

The Studio Schools in this study had a strong element of pastoral care that was evident in the day to day running and overall ethos of the schools. Described as a community where staff, students, senior leadership and even employers all 'just got along' (Curie Head of careers and employment), there was an inherent belief amongst several staff that everyone working in or with the school was truly looking to make the lives of the students better (DeGrasse SEN staff).

Most of the staff at the Studio Schools expressed a sense of community amongst members of staff that they had not felt in secondary education for a while. Staff felt that they could really count on one another, that they were all there because they truly believed in the merits of the Studio School model and were working together to 'have the schools fit

the needs of the child' (Curie Head of Science). This sense of collegiality and community amongst staff was framed in a particularly poignant manner by one member of staff at Studio School DeGrasse, who was in their training year as a Newly Qualified Teacher:

> **Interviewee:** Yes. You know when you go into somewhere, immediately you got a feel. You can nearly tell who you're going to have run-ins with and I have to say, I've never worked with a group of people like the group of people here.……I'd really battled with the flu and I'm not one to go out sick or anything like that, I came in the day. I came in straight through the barriers and I met with a business teacher and the art teacher. Immediately they saw me and they said, "No, go home. I'll take your first lesson, she'll take the second lesson and [the principal], will take your third lesson." …. Especially if you're on your probation, you don't know how that's [being sick] going to go down. It was amazing.

The size of the school was cited as the biggest contributing factor to the development of this sense of community. It facilitated not only the opportunity for staff, students, employers, and senior leadership to get to know each other quickly, but also enabled an interaction between students and teachers that was a lot closer than either had experienced at their previous secondary schools:

> It's very easy to have a sense of communities and when you meet people and you-- Right now I pretty much know most of- know everyone and I had a big school, it's difficult and as well as that. (Sagan Year 12 Student 1)

This close interaction between the teachers and students allowed for a more tailored approach to learning (something that had indeed been envisioned for the original model):

> They need a much smaller environment. Being a studio school, you can offer a more flexible style of learning because the teachers really do know the individual students well. They can tailor things to suit them. (Sagan Sponsor)

This was not a narrative that was obvious; conversations that mentioned personalisation of learning were all linked to this sense of fostering community:

> **Student**-because it's so much smaller. I know everyone I know all the teachers, I'm comfortable talking to people. Whereas coming from a really big school, if there were teachers I didn't know, I didn't want to have to talk to them. (Sagan Year 10 Student1)

Approaches to teaching (for example, the vertical tutor groups described above), and even the independent study periods were all elements facilitated towards building this sense of community. Ensuring that the students from the different year groups interacted with one another either in the open areas over lunch, or in projects was a way in which the students could get to know one another quite quickly. Students (as a way of empowering them) were also given the opportunity to mentor other students, which facilitated a feeling for most students that they could look out for each other as well:

> Whenever I walk around, I always see the year 11s or year 13s or year 12s doing that. We teach each other as well and say, I'm a little stuck on a certain subject and my friend knows that and they will help out. We will then sit around the table and we'll go through past papers, do stuff like that. (Franklin Year 12 Student 3)

This narrative of community was one that was framed from the perspective of a shared experience at secondary schools that had resulted in a move to Studio Schools. As made obvious from the sections above, all staff and the majority of students had made (what they viewed as) active choices to move to Studio Schools stemming from either a disengagement with secondary schooling or for a passion for the specialisms on offer. Whatever the rationale, having those shared reasons also made it easier for the members of the schools to come together into a closely-knit community fairly quickly.

> It's really supportive and friendly. There's a big sense of community. You join here for a certain reason. Everybody's like-minded. (Sagan Year12 Student 2)

7.6 So, what is the role of the Studio Schools in reality?

This chapter has brought to light the narratives for the role of the Studio Schools in practice, and how that role has been influenced by their chosen STEM specialisms, framed from the narratives of diverse stakeholders. What was clear from the narratives was an important role the schools played in the reengagement of not only students with secondary provision

but also staff. This was a role that the schools had not sought to market, not were currently championed for in current policy but had found themselves playing given the complex realities of their recruitment – a role that they viewed as incredibly important and yet sought to create distance from it. From the perspective of the students however, this role was incredibly important, one that made the school feel different and special – it is this disconnect of an understanding and appreciation of the roles of the schools within the schools that is so important to understand. This is where the strength of treating all the diverse stakeholders as policy narrators really showed.

It would have been easy to assume, as indeed the architects of the model had, that by choosing to offer a STEM qualification, Studio Schools were looking to position themselves as key providers of technical skills responding to the political rhetoric of the need for more STEM skills for a productive and innovative economy. And yet, as this chapter (and the previous) has shown, the choice to offer a STEM specialism provided the Studio Schools with a mechanism of not just putting students on pathways to STEM careers but also helped to develop other elements of their role in education. The high-profile perception of STEM specialisms had indeed helped to build a narrative for the schools that they could facilitate successful STEM futures for their students. This was not just the case for staff and employers, students also viewed the Studio School as the school where they might be able to achieve extraordinarily successful careers in high-profile STEM sectors.

Moreover, the staff in the Studio Schools in this study articulated that the role of the schools went beyond their envisioned role of building the employability skills enshrined in the CREATE framework. They looked to build character traits such as kindness, resilience, and a mutual respect. They wanted to focus on building skills that would focus on all facets of the student, rather than just academic ability. Once again, the choice of and adoption of

the STEM specialisms also helped frame this narrative in an unexpected manner. The schools in this study by choosing the STEM specialisms they had, had positioned themselves to prepare students for the jobs of the future and were making them more informed citizens able to engage with an ever-changing world driven by advances in STEM.

The Studio Schools in the study described another role that was unanticipated - that of the creation of a community atmosphere in secondary schools. Akin to the 'family' feeling of primary schools or community spirit of independent schools, the Studio Schools had inculcated for staff, students, and employers alike a feeling of community and belonging that they felt had been lost from all secondary provision.

It is important to address the tension that the Studio Schools expressed between their roles of reinvention and wanting to serve as pathways to successful careers in STEM. Much as the Studio School initiative had been on a journey that was confused, ending up being all things to all people, individual Studio Schools were also on a journey of enactment of their role. The role of reinvention is one that the Studio Schools recognised was an important one to play and yet felt the need to shift the narrative of their role more towards STEM careers, something that they felt they might be able to do due to aspirational nature of the STEM specialisms. As described in Chapter 5, the Studio Schools in this study had had to recruit heavily from within their MATs and from limited pools of other secondary schools, a move driven by external policy driven factors linked with the marketisation of education, high stakes examinations, and stricter accountability requirements. Despite not wanting to be known for this role, the importance of it was recognised. It can be argued that the role that Studio Schools were playing in practice was the one that they were envisioned to play at the very start, roles that had sat in contention from the very start. This interplay of policy and practice will be further explored in Chapter 8.

7.7 Chapter Summary

This chapter has highlighted the narratives of the key stakeholders in the schools for the role of Studio Schools in practice and has built an understanding of the interaction of the choice of specialism fits with the enactment of the role of the Studio Schools in the enactment of the model. It was highlighted that the Studio Schools were a place where students would be better prepared for a technologically changing world and would be equipped with the qualifications necessary to deal with an increasingly STEM-influenced nature of work. The schools were also a place where students could attain successful careers and become trailblazers in the STEM jobs that they were being prepared for. These STEM Studio Schools represented the kind of opportunity for their students that was unlike any other seen in their local communities and provided a home for those who may have felt like outcasts in their previous institutions because 'they were just too geeky'. Where the Studio Schools were being 'forced' into a role of reinvention due to external factors of competition (as discussed in Chapter 5), having a STEM specialism and its aspirational narrative allowed the Studio Schools in this study the opportunity to try and shift the emphasis of their role to one where they would be putting students on the pathway to successful careers. The next chapter, which is the final chapter of this thesis will seek to build on this understanding to situate this enactment for the role of the Studio Schools in the complex policy changes that have occurred since their inception.

CHAPTER 8 – Discussion and Concluding Thoughts

This thesis has sought to contribute to knowledge and understanding of Studio Schools through addressing the following research question:

What is the evolving role of Studio Schools in English education?

a) What was the envisioned role of Studio Schools and what were the major policy ideas that have shaped this?

b) What key factors influenced Studio Schools to have a STEM specialism?

c) What role do Studio Schools play in the educational landscape and how does the adoption of a STEM specialism have an impact on this role?

This chapter first summarises the key findings from this study and situates the discussion in the key policy themes outlined in Chapter 2 drawing out some lessons that could be considered for future school movements. This is followed by a discussion of the strengths and limitations of the study, with consideration of future directions for research.

8.1 What was the envisioned role of Studio Schools and what were the major policy ideas that have shaped this?

This study first investigated the envisioned role of the Studio Schools. In this instance, the perspective of the architects of the model and its supporters was a focus. Where other studies (van Urk ,2016; Thorley, 2017; Robson et al., 2018) have taken the goals of the Studio Schools model at face value (based on websites and publications from the Studio School Trust), this study sought to understand the rationale for their role from the architects, why they thought the model was important, and what policies impacted on the development of this role (in essence creating the policy ensemble for the role of the Studio Schools). This study was also the first to include the evolution of the structure of the Studio

School model, bringing to life the compromises made for the model to pass through government and become a reality (see Section 4.1). At inception and launch, Studio Schools were envisioned to play multiple roles in secondary education:

1) An alternative model of learning to the mainstream model of education.
    i. A model that would help 'reengage the disengaged student'.
    ii. A model that would facilitate a credible choice for parents and students alike.
2) A model that would provide a 'meaningful link to the world of work'.
3) A model that could be a champion of vocational education.

Using Ball et al.'s (2012) tool of 'policy ensembles' provided a nuanced approach to understanding how different policies had come together to influence the development of the model. The envisioned role(s) of the Studio Schools was one that was moulded by policies that were at the time focused on the personalisation of education in secondary schools (*Every Child Matters*, 2003), the development of enterprise skills (*Davies Review*, 2002), a coherent 14-19 pathway of institutions provided via a cooperative network of institutions with flexibility of offer of the curriculum (*14-19 Education and Skills*, 2005a), and multiple routes to providing a blended offer of academic and vocational qualifications.[104] What this study has demonstrated, in another first, is that the envisioned roles for the Studio School have never changed: the policies that knitted together to form the idea for it did, and the way the schools were advocated for by government, did.

> We're seeing a policy shift, we've seen a big policy shift over the last couple of years, towards a much more traditional model… I mean take the English Baccalaureate, it would be a catastrophe for students, and we're able to say, this not what the Studio Schools were designed for - you can't implement this policy in Studio Schools. (Studio School Trustee 1)

[104] See Section 4.3 for a detailed understanding of the policies that influenced the development of this role.

What became obvious was that the role of the Studio Schools was not only marketed differently to government to allow it to pass through parliament, but also to parents and students at different points in time, creating an incoherence and misunderstanding of the role(s) of the schools and the place Studio Schools were actually meant to occupy in secondary education. The architects of the model themselves were reticent to promote all roles of the model equally, almost neglecting the key role of reengagement in favour of the promotion of the Studio Schools being key providers of vocational and technical skills based on their perception that the word reengagement would make the school seem non-aspirational. This was done to reduce the perception that the architects felt parents might have of Studio Schools as the 'lesser offer'. This was ironic as the model through its championship of vocational and technical qualifications was always going to have to battle the perception of being a low status route (Section 2.4.5.1 demonstrated numerous policy attempts to inject a vocational offer into the secondary curriculum had failed in favour of academic subjects as the gold standard); something that the architects of the model had themselves recognised.

Importantly, what has been captured is the way the role of the Studio Schools was endorsed by successive governments (see Section 4.6) and has added confusion to the intended role of the Studio Schools in secondary education. New Labour in 2008, referred to the schools as a 'halfway house to alternative provision' in *Back on track: a strategy for modernising alternative provision for young people* (Department for Children, Schools & Families, 2008, p.28), endorsing what they believed was the most important role for Studio Schools, that is reengagement. And yet emphasis on this very role was abandoned in 2011 (HLDeb, 5 May 2011 col 569), replaced by the notion that Studio Schools (alongside UTCs) were focused on building high quality technical skills needed for the economy (Department

for Education, and Michael Gove, 2012; HCDeb, 19 Jan 2011 col300WH). The emphasis on building employability (as demonstrated in Section 2.4.5.2) was one that has been in and out of favour with various governments, where New Labour was keener to bring employability into education, there has been a more recent shift (*Post - 16 Plan*, 2016) into the sphere of post-16 schooling (which was only half of the schooling phase Studio Schools (and in fact UTCs) were meant to cover. Where the Studio Schools have been supported by government for the preparation of students for work, this has never been through policies or initiatives that have focused on employability skills, but always through the rhetoric of needing more vocational and technical skills for the economy. Even the way 'school choice' was viewed and pursued has changed since the inception of the Studio School model. Studio Schools were meant to function in a collaborative system (albeit one that was planned in a disjointed manner), yet have navigated a policy landscape rife with competition between schools (*School Choice Framework, 2013* being the most recent, see Section 2.4.3 for these shifts), undermining the mechanisms of collaboration that the Studio School model were intentioned to take advantage of.

> The hon. Member for Blackpool South was right that there must be some consistency in the narrative about Studio Schools and University Technical Colleges. (The Minister for Further Education and Skills, HC Deb 2011 vol 521, 306WH)

Ultimately as Chapter 4 demonstrated, the start of the Studio Schools movement and its envisioned role in secondary education proved messy, confused and was to be all things to all things to all people, resulting in a movement of schools who have fashioned their own roles influenced by competing policies and local contexts, and were on their own journeys of enactment to define their roles.

8.2 What key factors influenced Studio Schools to have a STEM specialism?

To understand why the majority of Studio Schools in this study chose to offer STEM specialisms as one of their offers or had labelled themselves as STEM schools, a top-down and bottom-up approach was utilised. First, the architects of the Studio School model were questioned as to why they believed the Studio Schools had chosen to adopt these specialisms (see Section 4.4), after which an understanding of the adoption of these specialisms was developed from the views of the SLT at the Studio Schools (see Chapter 6). The narratives developed from the enactment of specialism and the Studio School model in practice highlighted the disconnect between the expectations of the architects of the model and the individual schools, particularly in terms of the complexity of factors that influenced specialism choice.

The Studio School model was always meant to flexible in its curricular offer (see Sections 4.1 and 4.4), as the architects of the Studio School believed firstly that flexibility allowed Studio Schools to respond to the needs of their local economy, and secondly that there were key skill shortages in other sectors outside of STEM and so they wanted to build institutions enabled to respond to all of these shortages. However, despite this intended flexibility, not all Studio Schools and UTCs reflected the needs of the local economies they were located in (Cook et al., 2016) (see Section 2.1.1). Two of the Studio Schools in this study – Studio Schools Curie and Sagan – were examples of this. The architects of the model believed that the influencing factors pushing individual Studio Schools to choose STEM specialisms included: 1) tackling the national STEM skills shortage in England; 2) offering an aspirational narrative for the schools; and 3) an effective marketing tool for the recruitment of students.The narratives from the SLT, sponsors, and employers at the schools (presented in Chapter 6), in the event highlighted that the factors that had contributed to offering

STEM specialisms at individual Studio Schools were more complex than the architects of the model had articulated and involved the interplay of policy, purpose, and practicality.

Two of the schools in this study had been established in areas where a STEM offer provided an obvious link to the local economy (Studio Schools DeGrasse and Franklin), whereas for the other two (Studio Schools Curie and Sagan), it was a more tenuous link to regional and national needs. As predicted by the architects of model, the Studio Schools in this study did, in part, choose to offer STEM specialisms as a means of addressing and participating in the conversation and policy rhetoric on a national shortage of STEM skills (see Section 2.4.1 for the sustained government narrative and emphasis on this). From a practical perspective however, the Studio Schools in this study found themselves constrained by cost of their offer of certain STEM specialisms over others. For example, for Studio School Sagan, it would have made sense to offer an Engineering qualification to better reflect the needs of the local economy, however, school leaders found themselves unable to do so easily as they did not have the funding to purchase the specialist equipment that was required to make the specialism come to life. Recognising that the schools were operating within limited budgets (being small schools), and that they did not have the resources that the usually much larger FE colleges have, the Studio Schools in this study were constrained in the choice of qualifications that they could offer.

Another practical consideration contributing to the offer of STEM qualifications was that the specialisms potentially served as an effective means of recruitment of students, which the Trustees had recognised. The Studio Schools in this study took advantage of what they saw as the 'increased status of STEM subjects' (Curie Sponsor) to create a point of distinction between themselves and other secondary provision in their local areas to try and recruit parents and students to a new provision. The trustees of the Studio Schools,

however, had initially failed to recognise how these qualifications would also be important in recruiting new staff to the school; staff who were passionate about the teaching of these subjects, in a manner that would help fuel the students' enthusiasm for the subjects (see Section 6.4).

In addition, the architects of the model had also failed to recognise and understand the extent to which individual schools were engaging with key debates surrounding the purpose of STEM education and STEM education policy, which shaped the role of the Studio Schools. For these Studio Schools, the offer of STEM specialisms was not just about the direct link to the economy – national or local. For these schools, the STEM offer was a mechanism by which the Studio Schools engaged with the wider social purposes of the development of STEM skills, and in turn-built engagement in students (see Section 6.3). The Studio Schools were a place where students were treated as scientists and engineers, and not just as students, which served a dual purpose. Firstly, by adopting this approach, leaders at the Studio Schools were aiming to be trailblazers and disruptors of the way secondary school STEM education is delivered, something that they unanimously believed was piecemeal and disjointed (DeGrasse Principal) and not representative of the realities of STEM careers (Curie Headteacher). Secondly, by utilising this approach of building students' science (STEM) capital and in turn their STEM identity (as outlined in Section 6.3), school leaders used the specialism and its delivery to build student engagement (which, in effect, was one of the envisioned roles of the school).

The leaders of the Studio Schools also wanted to offer STEM specialisms as they regarded increasing STEM literacy and engagement in the wider community an important part of their role as well; this was an ideal that government policy on STEM had outlined in

the past (Roberts, 2002; Department for Business, Innovation & Skills, 2015) but never clearly emphasised (Wong et al., 2016).

When further considering the interplay of policy in the choice of qualifications, the leaders of the Studio Schools in this study described themselves as feeling as if their hands were tied; they found themselves bound by the strict accountability measures that had been introduced with the introduction of the EBacc in 2011 (see Section 6.1.1). Whereas the leaders and sponsors had wanted to offer the qualifications that were most valued and desired by employers, and would have chosen those that reflected the interdisciplinarity of the STEM specialisms that these schools were trying to headline, they felt that they had to work within the narrow confines of the qualifications that were outlined in the EBacc framework in order to be considered a credible part of secondary school provision. The Studio Schools' leaders, through their choice of qualifications, did however attempt to showcase some of the STEM subjects (such as Design and Technology, and Engineering) that tended to get side-lined in other secondary schools, as they felt these could show students that it was possible to create pathways to STEM careers that sat outside of GCSE and A level science and mathematics qualifications. This narrative once again sits very much at the heart of some of the debates in STEM education (see Section 2.4.1) where there has been a call from educators for a greater emphasis on subjects other than science and mathematics in STEM policy to reflect more the diversity of STEM careers.

This section has outlined the complex realities of choosing the STEM specialisms for the Studio Schools in this study, highlighting that the leaders and sponsor of the schools maintained a fine balance of factors and considerations when choosing qualifications. The next section will focus on understanding how the various roles of the Studio Schools have

been enacted in practice and building upon how the choice of STEM specialisms may have influenced that role.

8.3. What role do Studio Schools play in the educational landscape and how does the adoption of a STEM specialism have an impact on the enactment of this role?

The use of Ball's enactment framework (2012) contextualised and provided the tools that has enabled an understanding of the evolution of the role of Studio Schools. Understanding the policy ensemble for the role of the Studio Schools when first conceived not only provided a starting point for their evolution, but also a sense of the competing nature of policies when they were brought together in an innovative model such as the Studio Schools. Creating an understanding of the compromise and shifting advocacy also proved incredibly important, as it helped situate that the roles of the schools (and associated advocacy) were confused from the start. Also, by building the contextual understanding (Braun et al., 2011) of who the Studio Schools were, who they recruited, where they sat in their local communities, and how they had chosen to enact their specialisms (see Chapter 5), it became apparent that the Studio Schools in this study were struggling to position themselves as a credible choice of schooling within their local communities (due to the perceived notions of a vocational education and competitive behaviours of other schools in their MATs).As a result, these schools were entirely dependent on their belonging to a MAT to not only be considered a choice in education, but just to remain open. Where they became a choice in their individual MATs, it was a choice that had been fashioned by external factors. The positioning of the Studio Schools within their MATs could be best described as an uneasy symbiosis. The schools studied were entirely dependent on their MATs for back office support and to an extent even student recruitment. The relationship of the Studio Schools with the MAT was problematic in that the Studio Schools found

themselves recruiting those students that the other schools in their MAT's wanted to off-roll either because of their grades or due to behavioural issues. That said, there were glimpses of the collaboration that had been envisioned for the 14-19 phase of education (see Section 4.2.2) that could sometimes be seen within the microcosm of the MAT. Studio School students could avail themselves of qualifications that were available at other schools within the MAT, and similarly students from other schools could come to the Studio Schools for teaching or to even partake in some of the projects that had been set by employers. The contextual understanding described above also provided a sense for who the schools' communities were, allowing for a more nuanced understanding of why the Studio Schools were playing their specified roles in reality, and how the Studio Schools were enacting this particular role that had been envisioned for them.

Nonetheless, this uneasy relationship with the MATs and associated recruitment woes have had a defining part in shaping one of the roles that the Studio Schools were playing – that of being a 'second chance' provider. The evolving role of the Studio Schools is best described as a journey, one that begins with the schools serving as a place for reinvention to potentially moving towards one that facilitates aspirational pathways to successful careers for their students as well. The Studio Schools in this study, in their early years, recruited three categories of students: 1) those passionate about pursuing a career in STEM; 2) those looking to make a fresh start (either for academic reasons or behavioural); and 3) those that just did not quite fit in their previous secondary schools (for a variety of reasons such as special needs, personality types, and even subject interests). For all three 'types' of students, the Studio Schools served as a place of reinvention. This is where the more 'nerdy' or geeky students in Science who had perhaps felt out of place elsewhere felt like they could get acceptance; this was a place for students to be taken more seriously; and

even an environment where students received high pastoral support from staff and from their peers.

An unexpected finding was that the Studio Schools also provided a space for staff to reengage with secondary education; a chance for staff to reposition themselves and reinvent the secondary education provision that they had become so disenchanted by. This was a space that had even enticed those staff who had left education to return to teaching and feel that they could reengage with this profession. Staff felt that their opinions were valued and that their welfare was taken seriously, something that they believed was missing in a lot of other secondary schools.

Additionally, staff and leaders at the Studio Schools articulated the view that one of their key roles was to not just prepare their students for the world of work, but for life itself. Even the schools' choice of a STEM specialism was one based on a belief that life was being dominated by changes in science and technology and the school leaders and staff therefore felt that it was their duty to prepare their students to be able to engage with the changes; indeed students felt that Studio Schools were indeed the institution that could help them prepare for this changing world. There was also a sense that most contemporary employment had an element of STEM within it, and therefore by offering STEM qualifications, the schools would be better preparing students for the changing nature of work. The Studio Schools were also keen to instill in their students a sense of maturity and empowerment that would better prepare them for work and life. This served the dual purpose of empowering students to take themselves more seriously and contributing to their feeling of repositioning themselves as students who could succeed at school.

As mentioned earlier, it was obvious that the Studio Schools in this study were on a journey in the enactment of the various roles of the Studio School model. The choice of

STEM specialisms was in a way a very deliberate move on behalf of the Studio Schools to move the schools towards a role that was about facilitating an aspirational pathway to a successful career. The choice of a STEM specialism helped the schools fashion a role that also involved raising aspirations in their local communities given that STEM skills and careers were considered lucrative.

The Studio Schools in this study were also keen to re-build a sense of community in secondary schools that they felt had disappeared; one where the environment felt both personal and personalised. This role of community-building was one echoed through all the Studio Schools in this study; elements in the school from the open spaces for students to interact with different year groups at the same time, independent learning time, the peer mentoring opportunities, all were a part of the school model designed in part to foster this sense of community, which was linked with not only providing a high level of pastoral care, but also with building personalised learning.

It can be argued that the Studio Schools in this study chose not to serve as champions of vocational and technical education. Where vocational qualifications were on offer, it was because it made sense to offer it to meet employer needs, not because the schools were working to raise the status of them.

This section has focused on understanding the complex realities of the role(s) of the Studio Schools in practice. In reality, the Studio Schools were not enacting all the roles that had been originally envisioned for them, either choosing to reject some, or enact them in an unexpected manner and fashioning new roles driven by choice to focus on STEM. When comparing the roles, the Studio Schools in this study were choosing not to be champions of vocational and technical education, they were a semi-credible choice in an uneasy symbiosis within their MATs, and were working towards becoming the schools for students to attend

to move on to successful careers in STEM; all while serving as a place for reinvention, developing skills for life, and a community spirit. Hence the description of the schools being on a journey of enactment of their roles. The enactment of these roles has highlighted the tensions and potential disconnect between vision and reality. It also highlights that the way in which the role of the Studio Schools has been championed has resulted in a messy understanding for the role of the school. In practice, the Studio Schools in this study found themselves in a predicament wherein their role was first shaped very much by external forces such as competition from other schools, changing accountability requirements, and even the more conservative perceptions of a vocationally oriented curriculum, rather than their own choices of strategic direction. It is indeed ironic that this very role (reinvention) that they had been once championed for and had indeed been created to serve is one that they did not intentionally wish to play. And yet, though they recognised the importance of it, and even used their chosen specialisms to help enhance that role, they also attempted to create a role for themselves that shifted away from this externally-imposed remit, not necessarily in order to raise the status of the kind of curriculum they offered and believed in, but primarily to raise the status of the schools themselves.

This struggle that the Studio Schools experienced between the roles that knew where important for them to play, and how they wished to be perceived in education is representative of an urgent need to re-visit what is considered important in education , indeed the very purpose of education. The next section situates the evolution of the role of the Studio Schools in English policymaking and offers an alternative way of viewing these roles that Studio Schools play in reality.

8.4 A reflection on the evolution the role of Studio Schools and its relationship with policy

The Studio Schools in this study were on a journey in the framing of their role in secondary education, much like the Studio School model itself has been on its own journey in terms of its advocacy and emphasis. Through all the interviews, there is one quote that has really stood out, and resonates with the findings of this research:

> I mean, if one wrote the histories of Studio Schools, the word compromise would feature in a big way. Because, if we hadn't compromised at various points, you never would have had a Studio School, [let alone] a pure Studio school, as envisaged at the concept (Studio School Trustee 1)

This study has highlighted the need to recognise that the development and trajectory of 14-19 educational institutions such as Studio Schools has been 'political and increasingly politicised' (Gazeley, 2013, p.363). Studio Schools have endured a chequered journey. The school movement has been beleaguered by a number of problems (see Section 2.1), including but not limited to an under recruitment of students, high levels of student truancy, misused money, and closure of a large number of the schools in the network (fourteen since 2017 itself). The schools once championed by successive governments for its various roles (see Section 4.3), now find themselves out of favour, with a moratorium on the opening of new Studio Schools since 2018 (Robson et al., 2018). The Studio Schools Trust, responsible for the management of all Studio Schools has been disbanded due to a lack of funding, and the network of schools is now left in the hands of a few Principals whose inherent belief in the aims of the school model helps them firefight everyday issues. However, the Studio Schools have found themselves without a voice of advocacy for the role that they play in education.

Studio Schools (and by extension, other 14-19 institutions such as UTCs) can be viewed as a microcosm of the debates and issues dominating the landscape of English

policymaking surrounding the purpose of education, increasing diversity of provision, stringent and narrow accountability measures, and competition to name a few. The schools in this study were passionate about being disruptors to the status quo of secondary education, which they felt had become increasingly excluding in nature by the policy tinkering occurring over successive governments. This was a secondary education 'that ignored the needs of a significant group of young people leaving them educationally, economically and socially excluded' (Gazeley, 2013, p.364) that the schools had been envisioned to serve. The STEM-focused schools in this study advocated for an approach to education that many in science education (Osborne & Dillon, 2008; Calabrese Barton, 2011; Levinson, 2013; Reiss, 2014) and the proponents of 14-19 education (Pring et al., 2009) have promoted; indeed a secondary education that is holistic and inclusive, 'puts the learner at its heart' (Pring, 2013, p.15), helps build community in education (ibid, p.7) and equips young people to not only 'lead a personally fulfilling life [but also] help others to do so ' (Reiss & White, 2014).

Studio Schools represent a disruption in secondary education such that they are standalone institutions that attempt to deliver a curriculum from the age of 14. Where there has been no formal policy to lay the groundwork for a phase of 14-19 education, Studio Schools were always going to find it uncomfortable to find their place in secondary provision. The New Labour government with its reforms in 2006-07 faced policy in two ways 'encouraging both competition and collaboration' (Nuffield Review, 2007, p.7). Had policy remained unchanged in 2006, and the Studio Schools in this study been able to take advantage of the proposed 14-19 Entitlement and Partnerships programme (See sections 2.4.6 and 4.3) as a way of collaborating with other local provision to provide personalised pathways for learners, they may have thrived. Yet, they found themselves at the mercy of

the competitive turn that New Labour decided to pursue through increasing diversity of provision through academies and even the creation of Multi Academy Trusts. As highlighted by Robson et al. (2018, p.83) had a 'systems thinking' persisted rather than this enhanced competition between providers (as the Studio Schools experienced when launched), Studio Schools with its envisioned roles would have occupied a specific space in that system. Evidence from this study suggests that the Studio Schools had formed uneasy, yet collaborative 'systems-thinking' like collaboration within their individual MAT. However, in this scenario there role was not defined solely by themselves, it was shaped by external behaviours, such as the pressure for uniformity (Manzone, 2016), a lack of democratic accountability , and even a lack of community building (Baxter & Floyd, 2019) of the MAT itself, driven by changes in government policy. The Studio Schools were moulded into a role that was similar to that of something like an (perhaps even a 'halfway house') alternative provision school within their MATs; this was a role they were reticent to fill, which is ironic as it was one of the very roles they had been envisioned to play; indeed one of the original ways that they were advocated for by Government (Department for Children, Families and Schools, 2008b).

As evidenced in this study, Studio Schools had made active choices to not be part of FE, and yet sought to bring elements of the sector into mainstream schools. Despite positioning themselves as an alternative to the mainstream, by choosing to sit in mainstream secondary provision, Studio Schools were always going to have to engage with and navigate the competing and disconnected discourses of English policy and will continue to do so. That said, being a niche provider, as highlighted by Robson et al. (2018, p.84) can be unsustainable as well, as demand for the niche provision may be too low for an institution to remain financially viable (ibid). Therefore, being part of the mainstream was

perhaps the only way that Studio Schools could ensure that they were able to be more than just a 'project on the shelf' (Studio School Trustee 1).

The Studio Schools were also meant to serve as champions of vocational and technical education and giving them this championship role of what is considered a low status route was always going to be untenable. As shown in Section 2.4.5, there have been many attempts to inject a more vocational offer into lower secondary schools, however, these have always lost out to a tendency to view academic qualifications and the GCSEs as the central goal and gold standard of this phase of education. Studio Schools with their emphasis on employment and vocational opportunities were also going to struggle to overcome the 'conservatism with a small c' (Studio School Trustee 1) that society at large held with regards to vocational education, particular with a policy emphasis that has shifted more and more into the realm of a narrow set of academic qualifications and a path to higher education as the more acceptable route for young people (see Section 2.4). Where Studio Schools were conceived of in a time when there was still an emphasis on blending vocational and academic qualifications to provide personalised pathways to students (see Sections 2.4.5 and 4.3) at the lower secondary level , the schools navigated policymaking that shifted to a more traditional, binary tracking of vocational and academic qualifications (as outlined in Section 2.4.6). As introduced in Section 2.4.5, the focus for vocational qualifications and employability has shifted away from lower secondary level to the 16-19 phase, with an increased focus on a more academic curriculum (Section 2.4.4), making it even harder for the schools to maintain a unique work-oriented offer. That said, the Studio Schools in this study had in a way rejected this role, by choosing to not focus on offering only vocational qualifications or even a blend at all, stating that the specialisms and

qualifications in a way sometimes detracted from them wanting to challenge the entire approach to secondary education (as discussed further below).

Government's increased emphasis on the role of Studio Schools as being key providers of technical skills (with no mention of any of its other outlined roles) has led researchers to view Studio Schools as a failure, a set of schools that have 'strayed so dramatically from their original purpose' (Thorley, 2017, p.61) that they have recommended that no new schools be opened. This study has demonstrated however, that Studio Schools have not in fact strayed that far from their originally envisioned role. What was emphasised about them, and the way they marketed themselves to counter societal perceptions may have, and how this role was shaped by policy machinations may have, but the Studio Schools were very much still attempting to fulfill at least some of the roles originally envisioned for them. As demonstrated, the Studio Schools in this study were uneasy about their role of reengaging the forgotten learners (ironic as it was indeed a part of their envisioned role), much like the architects of the model were when initially marketing the role of the school. The very fact that they sought to distance themselves from this role, despite recognising the importance of it is indicative of the larger debates on the purposes of secondary education. When considering the factors that had contributed to the choice of STEM specialisms in the schools, and the role that the schools were fashioning for themselves, the Studio Schools in this study (as will be discussed in further detail below) were perhaps closer to offering a 'secondary education for all' (Pring, 2013, p.187) than they even appreciated.

Some may consider the finding that the Studio Schools were only, in part, using the concept of STEM as a tool for recruitment as flawed. They may argue that given the perception of an aspirational future with lucrative prospects, this was the only reason that

the schools may have been using the STEM banner – to get footfall through the door. This may indeed have been the way for the schools to find favour with government themselves, as they could be seen to be responding to the policy focus on developing STEM skills for key shortages in the labour market. Yet, as the findings have demonstrated, the senior leaders of the schools were prepared to not only engage, but in fact be trailblazers in their approach to secondary STEM education, and what purpose STEM education should have in young peoples' lives. This study therefore encourages us to revisit issues around the purpose of not only a 14-19 phase of education, but that of science (STEM) education. The findings from this study highlighted that some of the purposes that have been emphasised by key voices in both fields have common ground, and need voicing yet again as Studio Schools, UTCs, and new types of schooling struggle for viability – perhaps this will serve as an initial understanding for future innovative models of schooling.

As has been underlined throughout this thesis, the formal STEM agenda in England has been focused on the development of more scientists and engineers to plug the needs of the economy; however, there is a call from the science (STEM) education community to recognise aims for science (STEM) that go beyond this economic focus. Indeed, various government policies have tried to address this (see Section 2.4.1), yet the economically – focused rhetoric has persisted the loudest. Critiqued by many (for example, Millar et al., 1998), there has been a push to consider aims for science (STEM) education that serve the 'great majority of school students who will not become scientists' (Reiss & White, 2014, p.81). There has been a call to nurture scientific curiosity (Millar, 1996) and to facilitate a scientific literacy that will allow 'tomorrow's adults to understand scientific issues' (Reiss & White, 2014). The schools in this study wanted to serve as a place of study where students were to be prepared for a world that was increasingly being shaped by technological

changes, and thrive in its, inculcating in them an understanding of the nature of science. This role that the Studio Schools played resonated with the 'science as culture' idea (Reiss, 2014) that an understanding of science should be included in what counts as an educated person in the 21st century (ibid), advocating a wider vision of what counts as learning.

The role that Studio Schools find themselves playing in reality, and the incompatibility of this role with the emphasis in education policy re-asserts the call for a broader vision of education, one that echoes the calls made by Pring et al (2009) in their review of 14-19 Education and training, and further by Pring (2013) in his influential work 'The Life and Death of Secondary Education for all'. The Studio Schools in this study sought to offer a wide range of learning environments and opportunities; a need that has often been ignored in English policymaking .The Studio Schools in this study were challenging the focus of mainstream secondary education by focusing on the education of 'not just the individual learner, but []of the wider community (Pring, 2013. p.188), and in a way responding to the call for a more radical change in thinking around 'what counts as an educated person' (Nuffield Review, 2007; Pring et al., 2009; Pring, 2013). The schools in this study worked to instill in students a sense of self-worth, working to raise their resilience and self-esteem, and a 'sense of responsibility for the future' (ibid, p. 6) that echoes the aims of education that have been submitted (ibid). The Review also put forward the notion of a 'broader vision of learning and assessment' (ibid, p.7-8) that moved from a language of performance indicators that were not 'fit for purpose' (ibid, p.10) for this broader view of the aims of education. Indeed, the schools in this study also sought to build that sense of community (one in which students learned through interactions with one another and a fostering of mutual respect) in schools that Pring (2013, p.9) elucidated was an ideal promoted by many, including Dewey, as a principal aim of education.

Yet even though these Studio Schools represented an attempt to answer these very calls to broaden the aims of secondary education, they were subject to the narrow performance metrics and political whim of policymakers. Studio Schools were therefore representative of a cautionary tale of not only the disconnect between policy and practice, and the foibles of fast policymaking and everchanging foci on the purpose of education.

8.5 Lessons to consider

The analysis and discussion above have highlighted certain lessons that new schools or new models of schools may wish to consider when trying to create systemic change. This section summarises those lessons, and whilst this list is by no means exhaustive, nor these lessons necessarily novel, they are worth reiterating in the context of the diversity of schooling (Department for Education, 2013), and narrowing of schools curriculum that is only being further encouraged in secondary education presently.[105] Revisiting the idea of policy memory (Higham & Yeomans, 2007), new schools could consider learning from the lessons of schools that have already traversed this path so as not to repeat their mistakes. These are lessons that the remaining Studio Schools could also consider as they work to maintain their unique identities in the complex land of secondary school provision.

Leadership: All organisations and movements require strong leadership. What is obvious from the analysis in this study is that a new model of schooling requires strong leadership at all levels. The Studio School model and movement arguably suffered from a lack of strong leadership from the very beginning, and at its highest levels, allowing for a confused and mixed articulation of the schools' roles. Whereas the Studio School Trust believed in

[105] The current government (2020) unveiled a government pledge to allow for even more Free Schools to open to facilitate more school places. The Prime Minister called 'on parents, educational groups and community organisations to come together to set up brand new free schools'. https://www.gov.uk/government/news/pm-pledges-thousands-more-good-school-places

flexibility of the model almost to a fault, there was a need for a strong voice at the helm of the movement, which would have provided confidence to individual school leaders that they would have the support they would need. At the level of the individual school, strong leadership is needed to face the challenges of accountability and marketisation, as the leaders of the schools in this study found themselves doing. There needs to be a clear commitment to the cause at the highest levels, as this will help staff and students truly buy into the envisioned identity of the school.

Clear Framing of Purpose: The Studio School movement suffered from an unclear framing of its roles and place in secondary education. Crafted as a model that was all things to all people, and one that was emphasised and advocated for in different ways by national policy, the Studio School model was left open to multiple interpretations. This resulted in a messy identification of its roles from the outset, which in turn resulted in a set of schools that appeared wildly different to one another, and yet were supposedly working towards the same goals under the same brand. Individual Studio Schools were left much to their own devices to identify and shape their place in secondary education, which meant that schools did not necessarily engage with the same united purpose nor were they given any unified central support to help maintain a certain ethos.

Need for ongoing conversation between policy and practice: As has been stated before, schools do not exist in isolation. This study has adopted a policy enactment approach for this very reason as schools are constantly navigating a myriad of policies that can have an impact on their identity at any time. The Studio Schools are an excellent example of this, in that they were designed to flourish in a different policy time to the one in which they were subsequently implemented. And yet, Studio Schools, and their contemporaries, UTCs, were encouraged to grow, without any regard for the impact of policies on their functioning. In

the case of Studio Schools, more recent governments (2010 Coalition government onwards) have chosen to champion, with varying degrees of vigour, Studio Schools as the provider of technical skills, and the link to the world of work (almost ignoring their role of re-engagement), and yet have not supported their growth through additional funding or even through an emphasis on a 14-19 phase of education. Where these schools arguably fit with with the aims for a 'broader vision of education', there was no dialogue between the proponents of this model and its inherent strengths and policymakers to perhaps adopt less of a focus on the language of skills when it came to advocating for the Studio School model. There was a need for the Studio Schools to be better linked with national policies and government so as to have open and honest conversations about the model and how it would fit with the changing policies.

8.6 Strengths of the Study

This section briefly reviews the strengths of this study in terms of its design and qualitative approach: the preliminary fieldwork, the understanding of the role of the Studio Schools developed from both a top-down and bottom-up perspective, and the generation of narratives for the role of the schools from the perspective of many voices.

Although the data and analysis from the preliminary phase of fieldwork was notably absent from the main analysis of this thesis, the work that was conducted in this phase proved invaluable to the design of this study and gave confidence to the adoption of a holistic approach to understanding the role that Studio Schools play in practice. It was also pivotal in highlighting the need for a conceptual framework that could deal with the 'messiness' (Ball, 2013) of policy. What was also obvious in the preliminary phase of research was that Studio Schools were a heterogeneous and complex set of institutions, and that conceptions of the role of the Studio Schools were contested between different

stakeholders at the individual schools. It was here that it was first highlighted that there may be a tension in the way that the school leaders perceived and understood the model, and the way that students might, and so there needed to be data collected that represented all of these different viewpoints.

The use of the enactment framework has proven to be one of the strengths of the study. Creating the policy ensemble for the envisioned role of the Studio School model proved important in understanding why the Studio Schools seem like they belong to a different 'policy time', as it was demonstrated that the roles that the Studio Schools play today are more in line with the policies of yesterday. It has also helped to highlight the disconnects that can be created with ever-changing foci on the purposes of education, and helped to highlight the importance and need for the constant conversation needed between policy and practice.

Because this thesis sought to explore the evolving role of the Studio Schools in English education, it was important to invest in appreciating the intended goals and rationale for the existence of the Studio Schools. By exploring not only the perspectives of the architects of the model were with regards to the role, but also the policy debate and rhetoric surrounding the creation of the model, a robust understanding of the starting point of the Studio Schools' journey was generated. It was only by having this initial understanding that it became possible to contextualise and understand the evolution and emphasis of the roles within the Studio Schools. Understanding the key policy issues and debates prevalent at the time was also important as the Studio Schools (much like education has a whole) have not developed in a vacuum. This allowed for an understanding of how this envisioned role was shaped by the realities of enactment (for example, physical space, being part of a MAT, and so on) and of policies that may have an influence on it.

Having this understanding of the role of Studio Schools from both the perspective of the architects of the model (the Studio Schools Trust), and the enactors of the model (the Studio Schools themselves) allowed for an understanding of the journey that all Studio Schools have had to / must take (as discussed in this chapter).

The multi-perspective approach to the development of the narratives of the role of the Studio Schools in practice (i.e. from different stakeholders such as the Senior Leadership Team, students, staff, sponsors, and employers) adds to the quality of the analysis. By treating all the key stakeholders as policy narrators, it was ensured that the diverse interpretations of the role of the Studio Schools could be captured, adding to the strength of the analysis. Creating the narrative for the whole school by comparing and contrasting the narratives from the key stakeholders resulted in a rich and contextualised narrative for the whole school that leaves little room for misinterpretation.

Finally, the Studio Schools were a very understudied new 'form' of school. Understanding how they operated the way they do and where they fit within the overall spectrum of schooling was important in understanding the overall 'ecology' of secondary provision. Their story, as highlighted by this study, was also useful in gaining some understanding of the problems and issues facing any new type of schooling that competes with long-established forms of provision. All the more so when the new form is charged with delivering new types of education to types of students that do not fit easily within traditional academic models of curriculum and pedagogy combined with performance based measures originating from those traditional models. With an emphasis and encouragement on increasing diversity of schooling, if new school types are to be the answer or part of the answer to contemporary concerns about secondary provision, then understanding their criteria for survival and success seems quite important.

8.7 Limitations of the Study

In addition to the strengths of this study, there are inevitably some limitations in its design and analytical approach. A limitation which relates to the collection of interview data (but has been addressed in Section 3.3) is that:

1) there was no interview data collected from parents; and

2) there was one Studio School where the recruitment of students for interview was impossible leading to the student voice missing from one school.

The lack of recruitment at Studio School Curie is mitigated by the fact that there was recruitment of enough students who met the requirements of the criteria set at the other three case study sites allowing for 'data saturation' of the data analysis themes developed for the student respondents. This approach provided for narratives to be built to encompass Studio School Curie. The preliminary phase of this study provided the feedback for the recruitment of groups of individuals for the schools. At the two Studio Schools that were a part of this preliminary phase the data collected from parents indicated that it was more important to recruit students rather than parents to gain a realistic sense of the realities of the choices that students themselves were making to attend a Studio Schools and what role they played for them. That said, having a parent voice would have built on a sense for what the local communities believed the role of the Studio Schools was (employers already add this dimension to this study).

Another limitation of the study is that it has not taken into account all the diverse skills and specialisms that were a part of the overall Studio Schools network. There are still six schools in the network that had no offer of a STEM headline or any emphasis on the STEM subjects as the links to work. To complete the picture on the evolution of the roles of the Studio Schools on how the choice of specialisms may have shaped the role Studio

Schools play in their local communities, including these schools may have been beneficial. That said, as defined in Appendix D and illustrated in Section 2.2, the majority of Studio Schools that were still open have a STEM offer (vocational or academic), and so capturing the impact of a STEM offer on the role of the school does provide a sense of what might be happening over the whole network.

By assuming that each group of stakeholders is a policy narrator (Ball et al., 2011) this study has acknowledged that each group of stakeholders brought their own interpretation of the role of the school; this study was more concerned with gleaning what that understanding was, rather than how (that is exploring the individual histories of all of the interviewees) that understanding may have been shaped. Also, the design and analysis of the Main Phase of this study was informed by the Preliminary phase, allowing for both deductive and inductive coding of the data from the Main Phase. Therefore, using a thematic approach (which allows for these approaches) rather than a full narrative inquiry was deemed the most appropriate way forward for this study to build an understanding of what the role(s) of the Studio Schools were.

This study also did not collect or measure any data related to student progression or even student destinations. Having these elements would have added a layer of understanding to comprehend the extent to which the Studio Schools were not only re-engaging students with education but also putting them on aspirational pathways to work via the building of their STEM identities. That said, this limitation, in particular, leaves scope for future research as has been outlined in the next section.

8.8 Directions for Future Research

This study has highlighted several potential directions for future research, which would be of particular value to the understanding of the Studio Schools movement, but of 14-19

institutions more widely, as well as contributing to the various debates in STEM education that have been highlighted in this thesis.

That said, Studio Schools are a school movement that are in a 'cycle of decline' (Thorley, 2017). As demonstrated in Chapter 2 (Section 2.2), there are a limited number of schools that are open today (2020), with no new applications being accepted for Studio Schools (Robson et al., 2018). Therefore, much like CTCs before them, there were limited opportunities to conduct extensive research on the model. However, there was still a 24-school strong network of Studio Schools that were linked together rather than overseen by a loose structure of a Studio Schools Network. These schools were choosing to deploy the various components of the model, and therefore afforded the opportunity for building even more understanding of the schools.

In terms of specific suggestions for further research, first and foremost it must be acknowledged that the scope of this study was necessarily limited by the decision to only explore schools that offered STEM-based specialisms and therefore, the results of this study, which albeit do span a large percentage of the network of Studio Schools, would benefit from further strengthening by looking at other schools that offer different specialisms. This would allow for a validation for the role of the Studio Schools in practice and how the adoption and enactment of a particular specialism can shape that role.

Whereas this study has explored the factors that have contributed to the choice of STEM specialisms in the Studio Schools, there has not been the space to understand the impact of these choices on students in terms of the development of their STEM capital, STEM identity or even aspirations. This study chose to focus on understanding what the role of Studio Schools has become, influenced by policy and specialism choices. However, through the course of data collection, information was also gathered that related to

understanding subject choice, and school choice on the part of students. This thesis has not had the space to explore these topics in detail (other than to bring to life the narratives on the understood role of the schools), and therefore there is scope for further understanding on Studio Schools that can be generated from this existing data.

Where Studio Schools had chosen to try and build their students' STEM identities, there was also scope to re-visit some of the schools in the study to understand if this really has been achieved and if so, with what effect. What were the students' constructions of science and technology? Did they view themselves as scientists and engineers? Did this really have an impact on their achievement and career aspirations? Exploring the development of STEM identities at the Studio Schools would add to the debate on STEM education. There is also the potential to build understanding on the impact of such an approach on student destinations. The schools have now been open for longer periods, and so understanding where their students go would help highlight the strengths and limitations of this type of school model.

The Studio Schools in this study were on a journey of development of their role; one that focused on re-engaging students with education, and ultimately putting them on a path towards a better and more secure future. There is the possibility of future research that could utilise engagement literature (for example, Boekaerts, 2016; Finn & Zimmer, 2012) to measure in depth the realities of the level of reengagement that students experience at the Studio School.

This study also highlighted the place of Studio Schools in their mandated MAT structures as one that is beneficial yet fractious – and this relationship is one that warrants further study to contribute to the growing literature on governance in secondary schools via the MAT structure. Studio Schools have fought hard to maintain themselves as a distinctive

and credible choice for students and parents alike, and these attempts were impacted by the Studio Schools' relationships with their MATs on whom they found themselves inherently dependent. It was important to build an understanding on the impact of the policy change on governance in secondary schools and the unintended consequences that it may have had on the development of Studio Schools and in turn a 14-19 phase of education in secondary schools.

The research that has been conducted on Studio Schools thus far (VanUrk, 2016; Cook et al, 2016; Thorley et al, 2017; Robson et al, 2018) has all focused on the implementation of various elements of the Studio School model, and focused on their impact on students. There has been very little research done thus far on staff in Studio Schools and yet, as highlighted by this study and by Robson et al (2018), staff at Studio Schools played an important role in the enactment of the model, and in defining its role. There is potential for some interesting future research in understanding why staff had chosen to move to Studio Schools building on the idea of staff disengagement that was raised in Section 7.1.3.

Finally, Studio Schools are part of a set of institutions that attempted to deliver a secondary curriculum spread over a 14-19 age phase; this was something that sat outside the norm of secondary education as structured today in England, with students starting at the age of 11. As demonstrated in Chapter 2 (Section 2.4.6), there have been multiple attempts at developing and implementing a 14-19 curriculum, however, there has never been a successful policy push for the establishment of institutions that deliver a 14-19 curriculum. There was currently a strong advocacy for the focus of vocational education and links to work to be shifted to a post-16 focus, particularly with the development of T-levels (see Section 2.4.5). There is important work that needs to be done that explores the impact

of these policy decisions on all institutions involved in 14-19 provision, and what the policy sphere can learn from the implementations of the models that have been attempted thus far.

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Appendix A: Interview Schedules

A.1 Preliminary Phase

A.1.1 School – leadership and staff

- **The Why?**
    - What was the appeal in setting up/joining a Studio School?
    - What have been the challenges/ best experiences in setting up a Studio School?
    - What are your thoughts on offering such a curriculum from the age of 14?
    - How much push-back have you received from the local eco-system?
        - Who pushed back?
    - What has your marketing strategy been like?
    - How has it been received?
- **STEM**
    - Why the focus on STEM?
    - What are benefits of this kind of learning/ teaching?
        - Particularly for STEM skills, do you think this is important, and why?
        - What kind of STEM skills are you developing?
        - What other skills?
        - Why are these kinds of skills important?
    - What is the demand in the local area?
        - Why do you think the demand exists?
- **Innovative curriculum**
    - What has the response from parents in the area been like?
    - What are your thoughts on the CREATE framework?
    - How difficult has employer buy-in been?
        - How difficult/ easy is it to work with employers?
    - What is the best and worst thing about offering an alternative curriculum?
    - Do you follow the National curriculum?
        - If yes, why? How do you then distinguish yourself from the other schools/ colleges in the area
        - How would you like to distinguish yourself?
- **Choice**
    - How difficult has it been to receive 'buy-in' from the local existing network on schools?
        - Did you have a target audience in mind?
        - Have you ended up with a 'certain' type?
    - What are your thoughts on the school closures?
- What role do you think Studio Schools can play in the long term in the English education system?

A.1.2 Parents

- **Choice:**
    - Why Studio Schools?
        - What is the appeal for learning such as this?
        - Was the decision purely yours?
        - How much did your child's views play in on this?
    - What was the application process like?

        - What type of school did your child attend before this?
    - How hard was it to make this switch at 14?
    - Walk me through the decision making process.
- **STEM**
    - Why STEM?
        - Why do you think STEM is important?
        - Are you involved with STEM as a career?
        - Is it based on an interest/ job prospects?
    - What do you know about the STEM labour market?
        - What skills do you think your child will develop at such schools?
    - Is it about Higher Education or into a job?
- **Innovative Curriculum**
    - How is your child responding to such a curriculum?
        - What are your thoughts on this curriculum?
    - What do you think about the on-the job learning?

A.2 Main Phase

A.2.1 Interviews with Elites

A.2.1.1 Studio School Trust

- **The Why?**
    - Inspiration for setting up Studio Schools
    - Goals and motivations for setting up Studio Schools
        - What issues did you forsee?
    - What are you hoping to achieve in the English Education system?
    - What does success look like to you?
    - What would failure have looked like?
- **Why STEM?**
    - Why not just a focus on STEM?
        - What kind impact are you looking to create on the UK labour market?
        - Why do you think STEM is important?
        - Why such a broad set of offerings- from the very niche to the very general
- **Innovative offering**
    - How has the employer buy-in and backing worked?
    - Inspiration for the innovative curriculum
        - Why is workplace learning important?
        - Why a 14-19 curriculum? Why not earlier?
        - What skills are you looking to inculcate and why?
- **School choice and motivations**
    - Why do you think parents choose Studio Schools?
    - What do you think motivates students to come to Studio Schools?
    - What do you think of the school closures- not just for you, but UTC's are in a similar position – larger impact on field
        - Why do you think the school closures are happening?
        - What might you do to prevent such further closures?
- **Future ambitions**
    - What role do you see Studio Schools playing in the future?
    - What would you do to make this type of learning more mainstream?
    - What will success look like to you in the future?

A.2.1.2 Edge Foundation members

- **The Why?**
    - Long term goals for technical education in England
    - Inspiration behind backing Studio Schools project
        - What issues did you foresee?
        - What's the inspiration behind UTC's and Career Colleges?

        - What are the goals behind offering a diverse palate of options in terms of types of schools?
        - What is missing from the FE sector- what gaps are you trying to fill with such schools?
        - Why a 14-19 curriculum?
    - What does success look like to you?
    - What does failure look like?
- **STEM**
    - What impact are you looking to make in the UK labour market
        - Why do you think STEM is important?
- **Innovative Offering**
    - What would you do to make this type of learning more mainstream?
    - How has the response from industry been?
- **School Choice**
    - What do you think of the school closures?
    - What plans might you have?
- **Future of FE**
    - What are your plans for technical education?

A.2.2 School administrators

- **The Why?**
    - What was the appeal in setting up/joining a Studio School?
    - What have been the challenges/ best experiences in setting up a Studio School?
    - What are your thoughts on offering such a curriculum from the age of 14?
- **STEM**
    - Why the focus on STEM?
        - Why do you think STEM is important?
        - What do you think it means to be a 'STEM school'?
        - Why did you choose to come to a STEM school?
        - What is your vision for the school in terms of its accomplishments in STEM?
    - Do you have a STEM policy for the school?
        - How have did you put it together?
        - What has been the reaction to it from teachers and the community?
        - Why did you think it was important to have a policy?
        - What kind of activities do you think are important to enact this policy and why? What are you doing to implement them?
        - How and why did you choose the curricular qualifications and employer partners to enact your vision?
    - What are benefits of this kind of learning/ teaching?
    - What do you think of the 14-19 curriculum?
        - Particularly for STEM skills, do you think this is important, and why?
        - What kind of STEM skills are you developing?
        - What other skills?

        - Why are these kinds of skills important?
        - What have been the most difficult elements of setting up a 'STEM school'?
- **Innovative curriculum**
    - What has the response from parents in the area been like?
    - What are your thoughts on the CREATE framework?
    - How difficult has employer buy-in been?
        - How difficult/ easy is it to work with employers?
    - What is the best and worst thing about offering an alternative curriculum?
    - How are the students responding to such a curriculum?
        - How many come in wanting to follow a career in STEM?
- **Choice**
    - How difficult has it been to receive 'buy-in' from the local existing network on schools?
        - Did you have a target audience in mind?
        - What are the student demographics like?
    - What are your thoughts on the school closures?
        - What challenges does your school face?
        - What are ways you are looking to overcome them?
    - What role do you see your school playing in the local area?
        - What kinds of provision do you have in place to enable that role?
    - What role do you think Studio Schools can play in the long term in the English education system?

A.2.3 Teachers

- **The WHY?**
    - What was the appeal in joining a Studio School?
        - Did you work elsewhere before this? If so, what kind of a school
        - What is so different about here?
        - What are your thoughts on your experiences thus far at the school?
    - What has been the best experience so far about being a teacher at the school?
    - Did you receive any pushback from your previous jobs/ teachers on joining such a school?
        - Who / Why?
    - Anything else?

- **STEM**
    - What aspect of the STEM curriculum do you focus on?
    - Are you aware of the school's STEM policy?
        - Do you think it's worthwhile?
        - Why do you think it's important to focus on a STEM specialism?
        - Were you involved at all in picking the specialisms or the qualifications or any of the related activities?
            - How were these picked?

        - Why do you think these are the qualifications that students need?
        - How far have you been involved in the development of activities pertaining to the policy?
    - How different is the teaching from your training?
    - Why do you think STEM is important? What was your influence into STEM?
    - What does a lesson in the class look like?
        - How have students been reacting to the activities in the classroom?
        - How do you feel this is helping students gain more of an appreciation and understanding of STEM?

- **Curriculum**
    - Could you talk me through how you're incorporating project based learning into your course?
        - How do you balance the needs of the national curriculum and EBacc?
        - Do you think you're successful at incorporating?
    - What about the CREATE framework? Do you refer to it

A.2.4 Students

- **Choice:**
    - Why Studio Schools?
        - What is the appeal for learning such as this?
        - Was the decision purely yours?
        - What role did your parents play in the decision?
    - What was the application process like?
        - What type of school did you attend before this?
    - How hard was it to make this switch at 14?
        - Do you wish for such an offering at 11?
        - Could you list your top 3 factors that favoured your choice for such a switch?
    - Walk me through the decision making process.
- If I were a parent, and you were showing me around the school, what would you tell me are the best things (ideally three) about the school? Why?
        - What do you not like?

- **STEM**
    - Why STEM?
        - Why do you think STEM is important?
        - Are you involved with STEM as a career?
        - Is it based on an interest/ job prospects?
    - What do you know about the STEM labour market?
        - Do you feel more prepared at this school?
    - Is it about Higher Education or into a job?

- **Innovative Curriculum**
    - What do you think about learning through projects?

        - What do you think about the subject choices?
    - Talk to me about your work experience.

A.2.5 Employer partners

- **The Why?**
    - What was the appeal in joining a Studio School?
        - What have been the challenges/ best experiences in partnering with the Studio School?
        - What are your thoughts on offering such a curriculum from the age of 14?
        - What is your level of engagement with the school?
            - Why this level?
            - If you could do more/ less, would you?
- **STEM**
    - Why so you think there is need for a focus on STEM?
        - What are your goals with such partnerships?
        - Walk me through what a student work experience looks like?
        - What kind of a difference do you think Studio Schools make?

Appendix B: Preliminary Research – Key Themes

> On a Thursday afternoon we function like a Studio school, on all other days we are a mainstream school. Come see it on a Thursday afternoon- it's pure chaos, but it's when we function as a Studio School.
>
> - Headteacher at Studio School *Hopkins*

B.1 The two Studio Schools in context

Studio Schools *Hopkins* and *Hawking* are schools with limited resources at their disposal. Staff and administrators at both schools wear Multiple hats in fulfilling the various roles that they hold. For example, at Studio School *Hawking* the Head of sixth form also served as the career and guidance counsellor, a personal coach, and oversaw safeguarding[106] of the children at the school; while in Studio School *Hopkins,* the Vice Principal was also in charge of career guidance, taught [subject] at sixth form level, oversaw tutor groups, university information, and was in charge of school enrolments. All the staff hired at both schools either came with a long teaching history, or with relevant industry qualifications and a shorter teaching history. It is noteworthy that both schools are undersubscribed despite having a low intended recruitment target capped at 300 students.

Studio School Hopkins is a Studio School which offers specialisms in Creative and Digital Media, and Health Care amongst other offerings - these serve as the STEM strands of the schools. This school also offered STEM enrichment activities outside of the project-based learning and classes through a coding club. This club was open to all students in the town to serve a marketing purpose; it was a means to get the town and its students through their doors. Relatively new (opened in 2014), it is located in a small town, which along with its neighbour forms a unitary authority. The area has a predominately white British population (95% of the residents) and only 2% from a minority ethnic background (Town Area Profile *Hopkins*, 2011)

The Studio School is a part of a multi-academy trust (MAT), along with the two other secondary schools in the area. The history of secondary education in the town is mixed, with one of the local schools achieving on par with the national average results at GCSE, and the other below the average. Young people regularly leave the local area for post-16 education.

[106] Safeguarding refers to providing safety and promoting children's and learners' welfare. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413514/Safeguarding_in_schools.pdf

The school is housed in a purposefully refurbished building in the centre of the town, it is sponsored by an educational charity, and it is representative of the regeneration that the local council is wanting to bring to the area. While the school serves the local area, some students come from up to 20 miles away each day.

The biggest industry of employment for the town population is manufacturing (17.5%), closely followed by the wholesale and retail trade (including repair of motor vehicles - 14.9%), and human health and social work activities (14.7%). In the town itself, the majority of businesses are small and medium enterprises, but the surrounding area is home to some large-scale manufacturing. Fifteen percent of the population occupies professional occupations, closely followed by those in the skilled trades. Within the surrounding area, 33% of the population holds no qualifications at all or Level 1 (national average is 15%), where 26% of the population holds Level 4+ qualification (national average is 29.8%).

Studio School Hawking is a Studio School that offers specialisms in science and business. It is an established Studio School, having delivered the Studio School model for five years. It is in a small town (Town Area profile *Hawking*, 2011), and has a predominantly white British population - 97.5% of the population identifies as white British with less than 1% of the population being ethnic minorities.

The Studio School is sponsored by a Further Education College and is in a local authority that still operates a middle school system. It is currently in special measures [rated inadequate due to a lack of effective leadership and management; pupils not being prepared for the next level of education or work; an inadequate sixth form; and not all teachers having secure subject knowledge] and has a school improvement plan in place. The middle schools have served as feeder schools for the established secondary schools whose achievement is below or at par with the national average. The school is located on the campus of the college itself, which is a purpose-built new building, and serves to be an aspirational beacon in an otherwise declining town that has many failed regeneration attempts.

The town in which this school is located had a flourishing mining community with many large enterprises; however, since the 1980s this traditionally blue-collar town has lost investment and jobs. It is ranked within the 20% most deprived areas in England. The students that attend the schools are mostly from the immediate area, which is a smaller catchment area than the school aimed for.

Forty-one percent of the town holds no qualifications at all (national average is 14.8%), with the next highest set of the population having attained Level 1 (21%; national average is 15.2%). The biggest area of employment in the town is elementary occupations (20%), followed by process (plant and machine operatives) at 17%.

B.2 Why Studio Schools?

This is one of the key questions that was posed to each of the interviewees at the two Studio schools. For the sponsors and administration alike at both schools, the institution had been set up to try to raise the aspirations of the communities in which they were situated; it was about wanting to provide students with a choice that could help them aim higher and prepare them for what was ahead – be it work or future study. Head teachers at both schools were very clear that whilst this was indeed their hope, they did face an uphill battle with disengagement from both the students and parents – what was described as 'small town thinking' (Studio School *Hawking)*. They also spoke of an education landscape that was not receptive to the introduction of a new school to the area, particularly one that began at the age of 14. Parents at both schools on the other hand, viewed the role of the Studio Schools differently, where the underlying focus was about providing options to their children, and giving them a fresh start. For these parents, Studio Schools gave their children the attention that they had not received at their previous secondary schools:

> Moving at 14 wasn't hard for him, it was a relief.
>
> Parents of student at Studio School Hopkins

> This is the only school that has actually taken the time to assess my daughter properly and work with her needs.
>
> Parent of student at Studio School *Hawking*

B.3 Why STEM?

> Nationally, internationally and locally, the fastest growing sector… also I'll be honest, because it's attractive and cool, and if you're trying to recruit in a market that's not receptive to new schools, it's a lot easier to sell game design, than anything else.
>
> Headteacher at Studio School *Hawking*

> The facilities and resources at the college, the relative attractiveness to some people, some parents, particularly in engineering, the alignment of that work

> to what is a national skills shortage, a local and regional shortage is encouraging from the point of view of providers - we are collectively responding to that.

Sponsor at Studio School *Hopkins*

Sponsors and administrators cited multiple factors contributing to the choice of STEM-focused specialisms. What was common, however, was that both felt that by focusing on STEM they were able to respond effectively to policies that were in place at local, regional and national level. At Studio school *Hopkins* for example, the streams that are offered in Health and Social Care *and* Creative and Digital are in line with the skills growth plans that the relevant Local Enterprise Partnership (LEP) has in place for the region. This in turn also responds to national policy on developing the next generation of scientists and engineers. Both schools also stated they were using STEM qualifications and their development at Studio Schools as a vehicle to provide students with more aspirational goals and careers:

> You should meet with X, she is considering a career in art therapy. She's the first to tell you that this would never have been possible if not for the technical offerings in the Studio school, and the ability to combine it with learning through work opportunities. It's the combination of the two that gave her the idea for the career.

Vice Principal at Studio School *Hopkins*, speaking on a Health Care student's aspirations

When interviewing the specialism teachers at both schools however, staff did express some concerns. These teachers, while excited to be able to provide students with aspirational goals and motivation felt that the students often had much catching up to do in terms of their basic literacy and numeracy skills before they would truly be able to succeed in their chosen qualifications and career goals. This is an interesting finding that will be explored in the interviews during the course of the fieldwork.

B.3.1 What kinds of STEM qualifications and why?

	Studio School *Hopkins*		**Studio School *Hawking***
Key Stage 4	BTEC Level 2 Media Production including: game design, digital movie making, digital audio, animation, social media BTEC Level 2 Health and Social Care GCSE Computer science		NCFE Level 2 Certificate in Digital Technology GCSE Computer Science EAL Level 2 Engineering BTEC Level 2 Health and Social Care

Key Stage 5	BTEC Level 3 Health and Social Care A level Computer Science BTEC Level 3 Computer design BTEC Level 3 Technical Design		BTEC Level 3 in Science

Table B.1: List of STEM specialism qualifications on offer at Studio schools Hopkins and Hawking

Studio Schools *Hopkins* and *Hawking,* while attempting to respond to national and regional needs at a strategic level picked the specific qualifications (illustrated in Table 1) which could play to the strengths of either the sponsors or the community in which they were located. This meant they could take advantage of employer connections to make work placements more of a reality for the students in as relevant an occupation as possible. On the operational level, an interesting conundrum that both schools alluded to was that while they partnered with employers to provide the students with work experience and project based learning opportunities, the partnership with employers when choosing qualifications was not something they really focused on- another interesting finding that will be explored in interviews given that Studio Schools were meant to respond to the needs of the local labour market, Despite being a model of schooling that focuses on providing the kinds of skills that employers may feel necessary, both schools could really only pick those qualifications that were on Department for Education's (DfE) approved list of qualification as a specialism, otherwise it would count for nothing in the official school performance tables:

> We spoke with our employers here, and they wanted qualifications that had professional certifications. We couldn't really offer them, as they weren't on the Department for Education's approved list.
>
> Headteacher at Studio School *Hopkins*

Both Studio Schools deliver their STEM specialisms in environments that provide students with state-of-the-art physical equipment that they might need in their practical learning environments. For example, the students following digital production in Studio School *Hopkins* have access to an entire media studio and all the production kit that has been built on the premises of the school so that they can take full advantage of hands on learning through their course modules. At Studio School *Hawking*, the school can take advantage of the different specialist laboratories in the parent FE college, such as working on cars whilst still at school, to designing bridges. Despite these state of the art facilities, Studio School *Hawking* failed to recruit to such an extent that in 2015 only one student had taken part in their BTEC offering.

B.4 A pastoral role

The Studio School plays a clear role in providing a safe space for learning. This space has been created for those students that have had trouble adjusting to attendance at large comprehensive secondary schools. Students at both schools are provided with a one-to-one coach who works with them to create a personalized curriculum to achieve their own set goals. The entire community in the school works around ensuring that the children at the school feel safe, and can engage with their studies. The staff create a community that feels like a family, something that they attribute in part to the small school environment, and to the deliberate emphasis on providing proper guidance and coaching that is a part of the Studio School model. Parents felt that the schools provided opportunities for growth to their children that were not afforded to them at other comprehensive secondary schools. The fascinating conclusion that could be drawn is that Studio Schools much like UTCs and the CTCs before them, were more about providing that second chance to students who felt they had been failed by their previous education provision, and not so much about the development of specialists.

> We know the students inside and out. We need to know the details of all the students' lives. Some of them you know, just need a mum.
>
> Science teacher at Studio School *Hopkins*

> The staff and administration here have really made the school what it is. The teachers know my children, and my child feels like he counts at this school.
>
> Parent at Studio School *Hopkins*

B.5 A role and model in flux

Studio Schools can be considered an innovation in education with the way they choose to offer the curriculum, however, they do not exist in isolation of other educational policies that impact all mainstream schools:

> The whole system creates competition and rigidity.
>
> Governor, Studio School *Hopkins*

It was obvious at both institutions that the Studio Schools model was constantly being challenged and re-moulded and that there were some issues:

> There is a complete disconnect between education, policy, Studio Schools and UTCs. It makes absolutely no sense.

Governor at Studio School *Hopkins*

From the types of students that the schools were able to recruit, to performance measures, to even the way local community responded, the administrators and sponsors at both these schools were clear that keeping true to the Studio School model came at a price, and that there needed to be solutions that were offered to mitigate this. Studio Schools offer a new choice to parents and students alike, however they may enter a landscape of academies that appears almost hostile to new entrants in a world of limited budgets and resources. Both Studio Schools in this research phase struggled to not only recruit from surrounding secondary or middle schools, but also had disproportionate recruitment from low attainers (Cook et al., 2016), as well as from those students who were either labelled as 'naughty kids' at other schools or had special educational needs (School Hopkins and School Hawking demographics, 2016). Being held to the same accountability standards for progress meant that the two schools have focussed on teaching the main curriculum for these students and it has left less time for project based learning and limited work experience as per the original Studio school model:

> The nature of the school, and the cohort, over, in the short term, we considered whether or not we should become either a pupil referral unit or something that was not a mainstream school… with a cohort that are very challenging and a resource base that is very much just the normal.

Sponsor at Studio School *Hawking* when talking about accountability standards

> You can't really do anything except teach to the specifications, with very very clear reference to the exam criteria… and if you don't do that then you'll be pulled up by Ofsted. Where Ofsted don't give a monkey's about project based learning or employer engagement.

Headteacher at Studio School *Hopkins*

Embracing the Studio School model and remaining true to it has proven to be difficult, and has required strong leadership. In addition, lack of buy-in from staff has meant that there has been a drift towards a standard model of teaching, which in the case of one school led to the disastrous consequence of special measures:

> We are re-casting the original view of the school. It was my view as head of the chair of trustees that there had been drift away from the Studio school model… and it was because of the interpretation of the headteacher.

Sponsor of Studio School *Hawking*

The Studio School model is one that delivers practical learning in key specialisms, and teachers and administrators at both schools expressed discomfort in the continuous re-evaluation of the qualifications that they had chosen to offer. As they explained, this was due to the changing nature of BTECs as they shifted towards a more exam-based model, which was a challenge in a school where their students were the kind who responded better to hands-on learning. They felt the tension to provide relevant, high-quality qualifications that still allowed for project based and hands on learning.

Given these initial findings, it is obvious that the role the Studio Schools play is **not only dependent on the policies that impact and shape them**, but also on the perspective from which it is studied. Where administrators and sponsors were aiming to be aspirational, and prepare students for careers in STEM, for parents, Studio Schools represented a second chance for their children: a place where they could get through secondary education with a qualification. The result of these different perspectives makes it even more necessary for the role of STEM Studio Schools to be studied by interviewing different actors within each school**. A key missing voice in the preliminary research was that of students**, which was deemed more important than that of parents when making a choice of school, and so the research design has been updated to include them for a more comprehensive picture on the role of Studio Schools to be developed.

Appendix C: Coding Frameworks

C.1 Policy Ensemble and Why STEM: Studio School model architects, and documentary analysis

			Sample Quotes
Inspiration for the Studio School Model	Changing the argument on employability of young people	Lack of work readiness	"At the time, we were establishing the Studio School , it was not long after the CBI reported about the lack of work readiness of young people." "I think it's in response to the need for young people to be employable , for young people to understand the range of educational opportunities that are available to them," "But, as time went on, it became about, for us, it became more about the labour market - how do you make young people employable "
		Employability concerns	"The main ones I guess are- parental concern of their future- what's the future going to look like for their kids? I mean they're seeing relatively high youth unemployment in certain parts of the country (). They're seeing the jobs market has become much tighter."
		Employer demands	"what we said to the schools, to the potential schools was- the rest of the curriculum choice is up to you, and it should reflect local circumstances. It should reflect the local labour market" "it is now, employers were saying "we want employees who are literate and numerate obviously, but what we really want are people with employability skills. Now you could argue the precise definition of employability skills, but it's things like reliability, resilience, the ability to communicate, enterprising behavior, bah di blah blah."

	Changing the argument on current curriculum and pedagogy/ parity of esteem?	Project based learning absent from school	initially it was probably heavily leaning towards pedagogy, you know the project-based learning element. “That hands-on learning, learning by doing, the sort of , the marriage of the practical and the theoretical. The applied knowledge. if you think about the old traditional route, then you know , the sort of education route through A levels and on to university, that's very much academic theory, “The route to success was GCSEs, A-levels , university. job-for life, you know, very much traditional. And, Edge, particularly felt that that was actually failing a huge proportion of young people. They weren't- one of our outright paths to success, we firmly believe that the academic route doesn’t work for a lot of young people, who prefer to learn in a more sort of practical- hands-on way, but also that practical, hands-on way does actually benefit the most aspirational academic learners.”
		Current Restrictive curriculum	The route to success was GCSEs, A-levels , university. job-for life, you know, very much traditional. And, Edge, particularly felt that that was actually failing a huge proportion of young people. They weren't- one of our outright paths to success, we firmly believe that the academic route doesn’t work for a lot of young people, who prefer to learn in a more sort of practical- hands-on way, but also that practical, hands-on way does actually benefit the most aspirational academic learners. “we think that the Bacc and the EBacc as it stands is too prescriptive. you can see the statistics of falling numbers in sort of DT for example, you know, sort of very key to STEM becasue there isn't room in the EBacc in the curriculum ,

			particularly for perhaps the lower and middle attainer group." "I think it was a kind of model of education that was sustainable, successful, you know, had actual, real physical schools on the ground, and then the outcomes (project management), which is a dreadful way to think about young peoples' lives. It's about the students that go to these schools, and how they measure their own success. "
		Current pedagogy – lack of suitability for everyone	"and the ways in which they can learn, crucially, the ways , I don't need to tell you, people learn in different ways." "here was evidence. I mean, it's contested evidence, like almost all these things, that, a large subset of the population learned better through project based learning , than through conventional teaching. Now, I know there are people that say that's nonsense, and that there's no such thing as learning styles." "I actually think that the Studio Schools model in its purest form may shift some of the long term difficulties certain types of learners have had in accessing a very limited curriculum. And it is about broadening that platform, and I actually think Studio Schools are a practical way in which that can be addressed." "It's the latter. It isn't a deficit model, definitely, but to address the ills of the system, it is an emancipatory model for young people to discover how learning can be more than what they've experienced to date." "It was about improving (), improving young people's life chances. A group of young people who weren't doing particularly well in the current education system. You know, we're not talking

			about less intelligent pupils, or badly behaved people, just people who don't / hadn't reacted particularly well to the way that they were being taught.”
STEM	Concept used as a Tool	Marketability	“We were MUCH less concerned with the idea that these schools would teach STEM, or that they would teach , or have an alignment with social care. But we found, quite early on, that you had to provide a narrative to parents to say this school is different because it will do these things.”
		Aspirational	“So some Studio schools went for STEM, they went for engineering, as that was seen by many parents as aspirational.”
	Response to National policy – supply side response	Skills	“It's going to be hard for the UK to compete globally when we don't have this skill set. I think it's more about a sort of skill set rather than saying STEM is god, and that's where we go. Because, you do need this , you need all this - you need the complete package. You need technicians and those with technical qualifications and abilities, but you need the creative, the artistry to put it together, you need the workplace skills. I talked myself into silence” “We support the all of the policy changes for the development of STEM skills. We are absolutely 100% behind that- the economy needs it. There is a skills shortage, a skills gap, something needs to be done.”
Envisioned role	Skills for the labour market	Responding to need of the labour market	“I mean it's clear to me that we would never win an argument with government on the basis of pedagogy, you had to name a labour market solution rather than an education solution”
		Availability of skills	This was

	Social Mobility	Broadening opportunities	That, young people, whatever ability should have a choice, an opportunity to do things that they like and are interested in. Everybody has to do the basics, we're not saying that you can not do your english maths- you have to have that at the core of your abilities, and that you are on a path that suits you, and if that path shouldn't be a once in a lifetime decision. but if you start that path, and in six months, we've all started jobs in 3months and gone 'what the hell?'. So you know, so why should we able to expect students at the age of 14 to make that once in a lifetime decision. "the intention behind the school was to afford young people an opportunity to broaden their horizons in relation to the possibilities that work has to offer - to enable a broader vocabulary of employment opportunities, and to prepare them for ether work or further study." "Broadly expansive thinking, as much as expansive opportunities. It is based on a relatively emancipatory type of feel . I feel like it creates a lot of options."
		Aspirational	"It's the latter. It isn't a deficit model, definitely, but to address the ills of the system, it is an emancipatory model for young people to discover how learning can be more than what they've experienced to date." "Not really a specialism- we think of them as themes. The schools may think of them as specialisms, but we think of them as themes. Having a theme that is regarded as aspirational is incredibly important." "Absolutely. From a Edge point-of view, all of the projects that were involved with, all had to have an aspirational ethos to them. Because it's all about routes to success for us."

		Improving life chances	“You know, are they getting the qualifications that they need? Are they getting the sort of experience they need to lead fulfilling lives, whether that's in higher or further education or apprenticeships, or employment. I think that's the big outcome for all of us really. Are we giving young people the opportunities to fulfill their potential? “ “It was about improving (), improving young people's life chances. A group of young people who weren't doing particularly well in the current education system. You know, we're not talking about less intelligent pupils, or badly behaved people, just people who don't / hadn't reacted particularly well to the way that they were being taught.”
	Education as a Market	Increased choice	That, young people, whatever ability should have a choice, an opportunity to do things that they like and are interested in. Everybody has to do the basics, we're not saying that you can not do your english maths- you have to have that at the core of your abilities, and that you are on a path that suits you, and if that path shouldn’t be a once in a lifetime decision. but if you start that path, and in six months, we've all started jobs in 3months and gone 'what the hell?'. So you know, so why should we able to expect students at the age of 14 to make that once in a lifetime decision. “I think you've kind of hit on the knob of the problem there. The education system has become quite fragmented . There are lots of choice- and as soon as you get choice, then you have to try and differentiate, and the easiest way of differentiating is calling it something different. Also, I think that all of those things if you think about it- Studio Schools, UTCs, Carreer Colleges, they all sit in that 14-19 arena, they have things in common, but each has something that the other two don't, so there are sort of uniqu-nesses about them. So it is really about choice, it's about

			offering parents and young people the opportunity to find a school that is right for their son/ daughter whatever." "And then, what we said to the schools, to the potential schools was- the rest of the curriculum choice is up to you, and it should reflect local circumstances. It should reflect the local labour market. It should reflect parental demand to some extent. At GCSE level, studio schools offer a reasonably wide range of choices, and then post-GCSEs, it's a very wide range."
		Different choice	"So there's a big job to be done persuading the Department that a small school was kind of educationally and financially viable. And again, part of that, the argument for larger schools is that they offer more choice. We think that's kind of a meaningless middle-class thing. First of all, you've got to make a choice at 14 anyway, so in reality the choices are narrowing- so Studio schools don't offer a narrower choice- just a different choice."
		?	"So it's a crazy system. What was introduced was the notion, i suppose of a market, and suddenly there are new entrants to that market. And actually, existing providers are very hostile to the appearance of new entrants"
		Consequences	"So, we've had cases of students signing up to go to a SS, the parents being phoned up at their place of employment by the head teacher of the other school saying " no, you mustn't do this, it's an experiment. It will never work, Government don't really support it." We've had parents told that the employees of SS aren't checked for (I've forgotten)for their appropriateness to teach - which is nonsense. They go through the same checks as everybody else. We believe in qualified teachers, but schools are saying they are unqualified teachers. We've also had clear

			instances of kids being dumped in the SS for behavioral issues at their other school.“ “Others, the reality is there's been- there's a disproportionate number of groups whose things like prior attainment, and prior attendance has not been good. And that's partly because of the behaviour of other local schools actually.”
Type of student		Disenfranchised	“you know, we want truly comprehensive, in terms of ability, all sorts of things. And, some Studio schools have done that I think, but others haven't. Others, the reality is there's been- there's a disproportionate number of groups whose things like prior attainment, and prior attendance has not been good.” “Yeah Yeah. I think that's because there it's not so much that they've not done well in other schools, they're not achieving their potential in other schools. We learned quite early on not to use the word "disengaged" And the reason why we did'nt use that word after a while, is because it's a code word. People thought disengaged thought, not very bright, or badly behaved. e just meant disengaged,”
		Home schooled	One of the things we've found is, and nobody 's done the stats on this, but anecdotally, we have disproportionate numbers of kids who have been home-schooled previously.
		Practical learners	“The route to success was GCSEs, A-levels , university. job-for life, you know, very much traditional. And, Edge, particularly felt that that was actually failing a huge proportion of young people. They weren't- one of our outright paths to success, we firmly believe that the academic route doens't work for a lot of young people, who prefer to learn in a more sort of practical- hands-on way, but also that practical, hands-on way does actually benefit the most aspirational academic learners.”

C.2 Understanding the factors that have contributed choosing a STEM specialism (SLTs and sponsors)
Studio School DeGrasse

		Sample Quotes
What does being a STEM school mean?	Creating next generation of scientists and engineers	I think it's a fundamental part of you know, how we should think and operate. Science in a school doesn't do it at all. It needs to be a lot more joined up than that, and the Studio School model had a lot of appeal. (Staff) It means, first and foremost, you have to have a strong academic bedrock. You can't be a good engineer or a good scientist unless you have good command of English and good command of numbers. You can't ignore that. It's got to be a highly academic but not be frightened of saying that it's a highly academic offer of English, and maths, and science as the main bedrock. The technical, which I'd rather use than vocational, the technical is really an application of that academic backbone. We do that application through two means. One, alongside the academic, we offer technical education like a B Tech, but more so we offer application through what we call our employer challenges of the projects. All of our employers that we work with operate projects where they provide a problem to the students. (Sponsor)
	Preparing Students for changing world (work and general)	I think it's very important, just in the way we live our lives today. Even in the most basic of job descriptions now, there's such a focus on your math ability, the whole employability thing with computers and that. Computers, art, engineering. Everything seems to have a bit of it now. (Staff) STEM is really just a collection of subjects, whatever exposure we can get with students in relevant fields of work , then that is the number one sort of box we would tick. (SLT) Yes. I've really pushed for that, whereas some STEM point of view is, no we can't dumb down the curriculum for them. We can simplify how we teach it, but the end

		content is got to be the same because they all sit the same exam. So we don't teach them the content (Staff)
	Lack of understanding over concept	A lot of people don't understand what STEM means either. In fact, we did a study, one of our open events we asked everybody who walked through the door. "Have you ever heard the term STEM, and Do you know what it means? (Staff) Interviewer: what does STEM mean to you? Student: Isn't that the? I kind of know, but I don't exactly remember. Yes, I know. That's not what we are. We're a STEM specialist school. Not a special school, we're a specialist school. A lot of people misunderstood that or were misled I think. (Staff)
Why STEM?	Raising aspiration	
	Industry Links	There's a great engineering base around X. If you can have an educational level, even if you're only doing general engineering, it gives you a stepping stone into all branches of engineering. If you live locally, motor racing is a natural add-on to that. (Employer)
	Marketing	My view is probably if you're going to go for a vocational-based education, the STEM subjects are perhaps the natural ones to go for to attract the general. If you've started going down, I don't know, the catering industry or art, I'm not sure how easy that would be to sustain a school. (Employer) We had to change because people didn't understand what logistics was and people didn't understand was sustainable construction was, even if you can say it [chuckles]. It was decided it, our marketing manager decided to change it from sustainable construction to engineering and logistics to business because people understand business, sort of. People mostly understand engineering, or not- still don't understand it more so than sustainable construction.

		It's just the wording. We changed the wording so that- because people come to the thought, "So they're going to work in a warehouse?"
	Lack of skills	Our overall strategy has developed more acutely as well to be that of a pipeline of talent for business. That's effectively our new mission. We're trying to connect STEM education with high density of STEM businesses (Sponsor) That type of dumbing down products of the system is of no use to these employers that have got skills gaps.(Sponsor)
	Challenging STEM Provision	
Qualifications choice	Policy	BTEC construction isn't a course that we can run. And the way BTEC units can be combined has changed so we don't have that flexibility. So, essentially it's based on performance tables. (SLT)
	Perception	Link to Marketing (aspiration)
	Employer driven	life of the kid and also the environmental issues that will go with it as well. The third sector of X, it's a great area for engineering, Clearly, motor racing is what drives it. There's a great engineering base around X. If you can have an educational level, even if you're only doing general engineering, it gives you a stepping stone into all branches of engineering. If you live locally, motor racing is a natural add-on to that. (Employer) You have got proper recognized qualifications, but they're qualifications a future employer is going to look at because in reality if you go into a specialist career-- If you want to go into medicine, absolutely, you've got to have high level of maths, high level of biology, high level of science, but for people that are not really sure what they're going to do, your future employer isn't going to really worry whether you've got A-level geography or A-level history.(Employer)

Studio School Franklin

		Sample Quotes
What does being a STEM school mean?	Creating next generation of scientists and engineers	What is the current sort of thinking? What's coming out in the next few years. We get insight from the industry et cetera, from trade journals about what people are developing. The sort of things that teachers may not necessarily pick up for two or three years until it becomes a bit more public knowledge but we can say well this is the sort of thing that are being developed now. (Employer Partner) I think it's clever to focus around that although it's not a gimmick. It is truly part of their curriculum. I also think that that's probably one of the emerging markets in the future and that makes good sense to start skilling people up there (Employer Partner)
	Preparing Students for changing world (work and general)	I think it's clever to focus around that although it's not a gimmick. It is truly part of their curriculum. I also think that that's probably one of the emerging markets in the future and that makes good sense to start skilling people up there. Also, from my own industry, the aviation industry, it's in line with the requirements that you would want for people in the aero industry. Of course, that's a great synergy to the space industry (employer)
Why STEM?	Aspirational theme	Link to Marketing I'm an environmental manager by trade, and I'm a big fan of science and technology. I come from a background where we were destined to be blue-collar factory workers and followed that model for a little bit before I realized that I had a brain and I could use it.(Employer Partner) -> also link to raising aspiration

	Industry Links	And to be fair, lots of astronauts were test pilots or pilots in the first place so it all links together. But yes, being near [Airport] would be mad to- (Principal) Because we've been described as a feeder school for [Airport] **Interviewer:** Have you? **Vice Principal:** Yes. **Interviewer:** I've not heard of that one yet. **Vice Principal:** Which is like-- okay. Yes, it's been about aviation, the companies around here are very much engineering focused. That was what we are specializing because junior schools are meant to serve what we serve in Airport. So it's a simple way of putting it. > The model for Studio Schools is to mirror the industry in and around the school, around the area, so [Airport X] is massive…… I think that's, it's easier for us to make business links if we are in the same area as the local people who work in those businesses. (Franklin Principal)
	Marketing	> The model for Studio Schools is to mirror the industry in and around the school, around the area, so [Airport X] is massive…… I think that's, it's easier for us to make business links if we are in the same area as the local people who work in those businesses. (Franklin Principal) Such as we find it easier to recruit staff because people think, "It focuses on space, science, maths and engineering."….. We don't have problem recruiting staff, which lots of schools do. We get people who are science teachers and presumably, they're fed up of having schools where they've got 30% of their kids really don't like science at all. I've plucked a number. I don't know what the number is. Or it's something

		that just excites them. I don't know. We don't have a problem recruiting staff, which lots of schools do.
	Lack of skills	I think about that as one aspect of us. I guess I do more engaged in interest in the engineering aspect, the engineering B-Tech, and the engineering opportunities for a core project (Lead Science Teacher) We need more people taking the STEM subjects. We're trying to bridge that gap[referring to the lack of people in STEM jobs] really by spending half a week doing the industrial work and the other half a week telling stories how exciting that industrial work is and what opportunities are for them. It's a nice mix. (Franklin Sponsor
	Challenging Secondary school provision	The opportunity to work on more research related projects in science is part of the student's everyday and we mentor them through solving real problems; something I did not get the full support of at [my previous] school. (Head of Science) We get involved in research and design projects around those topics. What we do is we take the work that we're doing obviously where confidentiality is accepted, but we take the work that we're doing and we turn those into STEM projects from a genuine to work with schools at all levels from primary school through secondary, colleges. Basically to teach what's going on in the real world, what are engineers doing today what are the problems they are trying to solve now(Employer Partner)
Qualifications choice	Policy	STEM provision is limited to science and maths' (Vice Principal) I'm not sure I'd still be able to do it. I'm totally out of practice. Why? It's very difficult because we're still stuck within the examination system. We have to play the examination game. We have to play the hoop jumping to get through their English and their maths in GCSE. It annoys

		me immensely that our first exams results will be with completely untested examinations system.(Principal)
	Perception	We do that. That's pretty broad really. Would I want us to- - Because there's an argument that some studio schools are taking streams of years 7, 8, 9 so one class on. Would I do that? No, I wouldn't because I think it's important but they have experience in music, art, drama as they come up through the school. We also have had kids who've during their elective times has decided to play musical instruments. Fine, bring them in, do it. I have no problem with that. (Principal) -> idea of red herring with specialism -> I was quite happily not to be STEM-focused school. The thing that really appealed to me was the project based- We get people who are science teachers and presumably, they're fed up of having schools where they've got 30% of their kids really don't like science at all. I've plucked a number. I don't know what the number is. Or it's something that just excites them. I don't know. We don't have a problem recruiting staff, which lots of schools do. (Principal)
	Employer driven	Which is the Engineering Development Trust. The Engineering Development Trust, we have a three-year relationship with. They source for us the employers who come in and do the mentoring on a weekly basis through that six month project.

Studio School Curie

		Sample Quotes
What does being a STEM school mean?	Creating the next generation of scientists and engineers	"They don't arrive in year 10 thinking of themselves as scientists. Once they think of themselves as scientists teaching them science is really easy. "(Staff) The teacher didn't know the answer they did. They knew the answer first and that's science (Staff)
	Making Science more than about learning and regurgitating for exams	"Number two we've got a place where the students have a science home. Which I think makes a real difference" (Staff) "Which is great. For me, I think there are ways to do a lot of brilliant stuff in science without necessarily doing the practical, and a lot of the thinking on end, and conceptualizing, and modeling, and all that stuff, and creative thinking. But either way, those things simply can't easily be shoehorned into the current typical secondary education system. What I mean by STEM school is one where we would in time have the scope to be able to flavor a very different way of teaching, really." (SLT) well they do the sciences but it's just nice to have it all under one roof, isn't it? Because you know under one roof, you've got all the kids whose interests are fairly similar so you haven't got that diverse, you're in assemblies and things like that. You can show things about robotics and the latest developments in materials and you know that they're engaged because that's the area that they want to be in. (Staff and SLT)
	More than employment destinations	The STEM in a way is more about the intended destinations for these kids and more about the gap in the economic, the employment workforce, and therefore, a desperate restriction on our growth of our economy (SLT)
Why STEM?	Loss of focus in schools on certain quals	"Wouldn't it be nice if we could have somewhere where the curriculum really had a seasoning of technology right through it. Also because I suppose really the amounts of equipment you need for decent technology a mainstream

		school with 16-1700 students in it. It's very hard to resource that, but as a Studio School like this“ (Employer)
	Deficit of skills in local and national context	That's what the other members of the governing body tell me. They are technology business leaders and they need to recruit. One of the first times I spoke to Tim, he told me how he was trying to recruit software engineers as it happened, because I don't …I think there is demand in this area for those skills, but I think also more broadly in the Southwest (SLT) Well look at the deficit, seriously look at the deficit. In this area, there used to be a tradition of high end engineering in X that used to have some really good mechanical engineer that used to make sort of big frames all over the world and things like that. It all got lost. (Employer)
	Industry Links	“We wanted it to because our children have that focus and also because of the [employer] link I think, because of our employer, that the employees that were already working with the school when it was being bid for-“ (Staff) What developed during the '90s and from then on, was some fantastically productive industry links. I would say I've been the major driving force for involving industry in STEM subjects at Curie’s sister school. (Staff)
	No decent provision at Level 3	There's FE, the schools, nobody is doing what we thought schools should do or colleges should do in the sense of there's just a dead zone between 14 and 19 where it just drops away. There's no alternative provision. The colleges are really, in my opinion, working on quite a low level two kind of engineering stuff. What they're not doing is innovation, invention, that kind of thing. (Employer)

Studio School Sagan

		Sample Quotes
What does being a STEM school mean?	Creating next generation of scientists and engineers	They wanted to be focusing on that because the end was to get people into the space industry (Head of Science) For me, it's about saying that there's a lot of opportunity out there in our country that we're not tapping into. The number of engineering jobs that are available and that we're just not producing young people who are ready for. (Principal) It's going to sound probably corny. I believe that VR has a significant future and I believe that making that future become a reality needs to involve people as young as possible.
	Preparing Students for changing world (work and general)	I think students who exist to help people believe that they can be part of the creation of the future, not just consumers of it. That's what I believe studio schools should do.
Why STEM?	Aspirational theme	Secondly, I think studio schools should exist to inspire, because I'm sure that students are at such an age where believing in something is so important. (Employer) I think students who exist to help people believe that they can be part of the creation of the future, not just consumers of it. That's what I believe studio schools should do. (Employer)
	Industry Links	we do have various industries to do with space down past Oxford and down there. He would have had connections with them. The National Space Centre in Leicester, he had connections with them. (Principal)

	Marketing	Obviously, it's quite attractive to some young people, isn't it? The idea of- **Interviewer:** - studying in space school? (Principal) That was a real draw for the students. For those who were very science-based, absolutely loved it. Really, he came up with the initial idea of, "Let's make it space-based." It's all the STEM but focused around the space industry. (Sponsor) capacity on our ground to build a studio school. Then, it wasn't too far from left of where we had the National Space Center. We knew that was a good location. Then, we thought space being and getting really popular and people love the idea of it. We thought, "Why not open another one (Sponsor) Which is why we're trying to downplay space a little bit. It was never intended as you're going to be astronaut, you're going to space. It was about space-related industry. Which actually does tie into the motor industry because it's the same technology in many instances. They're just making that a little bit (Head of School) When we do get through to people, they love the whole space theme as something very different and interesting. (Sponsor)
	Lack of skills	We have a massive skills gap in UK, significant. The economy that we are having now is moving away from manufacturing in the UK. Moving away from traditional manufacturing, it's coming back towards manufacturing but it is high-end technical practice. Having that engineering expertise and that maths expertise nationally is a problem. We are crying out for graduates into those fields and we don't have enough. Universities can do that but actually, it needs to come from further down. This idea of school is great, getting people that have already focused on STEM to really think about that and move down that route (Head of Science)

	Challenging Secondary school provision	I saw that there was a real need for somebody to come in to, not just give a lead technically, which was not my original idea, but also that there was an ideological and philosophical gap in terms of promoting computer science as a discipline, which I just believe in anyway. Lots of subjects in schools are taught quiet dryly (Employer) Like I said, to miss out on certain humanities content early is also risky, but as far as even big picture, the shortage isn't that, the shortage is people choosing STEM. People fall away from STEM. My year 13s have three girls, three boys . I saw a computer science year 11 with 11 boys, no girls. That's a problem that you don't fix by saying, "h, that's too bad." You have to do something. (Head of Science)
Qualifications choice	Policy	For me, it's about embracing what's out there in terms of science, technology, math, engineering. We're looking to try and get engineering off the ground. We've got to be careful financially because you can't just have a whole plethora of courses. There isn't the money around to do that because we've got less and less money as well. It's quite a challenge really just to say, "Well, how do we position ourselves and what do we offer in the curriculum?" because it's much narrow curriculum because we do cool projects.
	Perception	Well, we want it to be the premier place to go for math and science. That's what we're doing. That's what we're saying. When we're recruiting staff, we're saying, "This is different. This is going to be where we hope to attract some really gifted mathematicians over there. We teach astronomy really. Personally, I think it's a bit gimmicky because maybe it's partly to do with the fact that those connections will break down and they never

		really worked as well as they could have done. I think it needs to be broader than that. I think it's too narrow for a secondary school environment. Space isn't just about going into spaces as an astronaut. There's a whole series of other industries that sit underneath the whole thing about putting a person in space. We are trying to broaden it now to say it is STEM
	Employer driven	There's a whole series of other industries that sit underneath the whole thing about putting a person in space. We are trying to broaden it now to say it is STEM

Appendix D

D1: Classification of STEM schools based on specialisms offered

All data about number of schools open and qualifications that students are entered for obtained from the government public releases available on gov.uk : School and College Performance Measures . Only the schools that were open in the 2019/20 academic year have been included. The qualifications are based on 2018/19 entries for each school as the 2019/20 qualification entry data was not yet available in early 2020. Qualifications from 2016/17 are not shown to preserve anonymity.

Number of Open Studio Schools (2020) = 24
Number of Studio Schools with STEM offerings (highlighted in green) = 19
The qualifications that are italicized are the non EBacc offers. The qualifications highlighted in bold are what led to the classification of the school as STEM. Information in the 'Specialism Description' columns have been obtained from the school website.

	School Name	**Specialism Description 2020**	**Specialism Description 2016/17**	**GCSE non -STEM**	**GCSE STEM**	**BTEC STEM**	**BTEC Other**	**non-GCSE vocational**
1	Stephenson Studio School	Business Studies	Business and Science	Social Science English Language English Literature	Science: Double Award Maths	***Health Studies***	*Business Studies*	*Town Planning* *Beauty Care/ Services*
2	Parkside Studio College	Creative Media, **Health and Social Care,** Hospitality and Catering, Hairdressing and Beauty Therapy,		English Language English Literature	Maths Science: Double Award	***Health Studies*** ***Building/Construction Operations***	*Business Studies* *Hospitality / Catering Studies* *Multimedia* *Sports Studies*	***Applied ICT***

		together with the Sport and Leisure sectors.						
3	LeAF Studio	Performing Arts or Sport		English Language English Literature, French Geography History Spanish Business Studies Dance Drama & Theatre Studies Media/Film/TV Studies Music PE/Sports Studies, Religious Studies	Science: Double Award Mathematics			Personal Health

4	The Studio School Liverpool	**Creative and Digital**		Arabic English Language English Literature, Geography History Polish Spanish Turkish *Arts&Design* *Film Studies* *PE* *Sociology*	Mathematics Science: Double Award Computer Studies/Computing ***Psychology***	***Engineering Studies***	*Business Studies* *Multimedia* *Music Studies* *Sports Studies* *Tourism*	***Applied ICT*** *Small Business Management*
5	Waverley Studio College	**Health , Creative Technology, and Enterprise**		Arabic English Language English Literature, French German History Italian Spanish Urdu *Art&Design* *Religious Studies*	Biology Chemistry Mathematics Physics Science: double award ***Statistics***	***Health Studies***	*Business Studies,* *Multimedia*	***Applied ICT*** ***Computer Appreciation/Introduction***
6	Walsall Studio School	Creative		English Language English Literature	Biology, Chemistry Mathematics Physics		Art &Design Business Studies Multimedia	Music performance Personal finance Speech & drama

7	Darwen Aldridge Enterprise Studio	**Creative Digital Media, Technical Digital Media** and Care sector studies	Creative and Digital Media, and Health Care	English Language English Literature Spanish *Art & Design* *Social Science*	Computer Studies/Computing Mathematics Science: Double Award	***Health Studies***	Multimedia Childcare Skills Business studies	***Applied ICT***
8	Cheshire Studio School	Not obvious		English Language English Literature Geography Art &Design Drama & Theatre studies Physical Education/Sports Studies	Mathematics Science: Double Award	***Health Studies***	Sports Studies	Hospitality / Catering studies
9	Futures Institute Banbury	**Technical and Digital**		Music English Language English Literature French Geography History Modern Greek Polish Spanish	Biology Chemistry Computer Studies/Computing Mathematics Physics Science: Double Award		*Speech and Drama*	*Personal Health* ***Manufacturing*** ***Engineering*** *Sports Studies*
10	The Bath Studio School	Media and Film	Games design, Digital Media, Photography, Business	English Literature English Language *Art&Design* *Business Studies*	Mathematics, Science: Double Award		*Business Studies, Multimedia*	

			Enterprise, TV and Film					
11	Studio West	**Technology, design, manufacture, finance and engineering sectors**		English Language English Literature, Geography, *Art&Design*	Biology Chemistry Mathematics Physics Science: Double Award	***Building/Construction***	*Business Studies* *Sports Studies*	*Childcare skills,* ***Computer appreciation/ introduction****,* *Hospitality* ***Manufacturing engineering***
12	Dorset Studio School	Land and **Environment: Equine Care, Veterinary Nursing**, Farming, Rural Craft, Environmental and Countryside Management		English Language English Literature, Geography	Biology Chemistry Mathematics Physics Science: Double Award	***Animal Care (non-agricultural)***	*Sports Studies,* *Tourism*	*Land Based Ops*
13	De Salis Studio College	Business, Retail and Management, Finance and Accounting, Criminology, **Psychology**		English Language English Literature French Geography Italian Portuguese *Economics*	Biology Chemistry Computer Studies/Computing Mathematics Physics, Science: Double Award	***Psychology Statistics***	*Sports Studies*	*Personal Finance* ***Applied ICT***

		and Computer Science.		*Business Studies*				
14	Digitech Studio School	**Creative, digital and high tech sector**		English Language English Literature, Polish *Art&Design* *Business Studies*	Biology Chemistry, Computer Studies/Computing Mathematics Physics Science: Double Award ***Design & Technology***		*Sports Studies*	*Personal Finance* ***Applied ICT*** ***Computer Appreciation/Introduction***
15	Atrium Studio School	**Built Environment** and Creative Industries (Architecture, Surveying & Planning, **Engineering,** Town Planning, Ecology, Design,		Ancient History Chinese English Language English Literature Geography Spanish *Art&Design* *Business Studies,* *Drama & Theatre Studies* *Music* *PE* ***Psychology***	Biology Chemistry, Computer Studies/ Computing, Mathematics Physics Science: Double Award ***Applied Engineering Design &Technology***	***Engineering Studies***	*Business Studies*	***Computer Appreciation/Introduction***

		Photography and Media)		***Statistics***				
16	Mendip Studio School	**Science, Technology and Engineering**		English Language English Literature French Geography German History *Art&Design* *Drama* *Business Studies* *Religious Studies*	Biology Chemistry Computer Studies Mathematics Physics Science: Double Award ***Design & Technology***		*Business studies* *Multimedia* *Music Studies* *Sports Studies*	***Engineering Studies 1 and 2*** *Hospitality* *Childcare Skills* ***Computer appreciation/Introduction*** ***Applied ICT***
17	Space Studio West London	**Science and technology**		English Language English Literature, French Geography History Persian Urdu Spanish	Biology Chemistry Computer Studies/Computing Physics Science Double Award ***Astronomy*** ***Statistics***	***Engineering Studies***	*Tourism*	*Personal Finance*

18	IKB Academy	**Architecture & the Built Environment ; Design Engineering; Digital Engineering; Science and Medicine**		English Language English Literature French Geography Modern Greek, *Art&Design* *Business Studies,* *Drama* *Music* *PE*	Biology Chemistry Computer Studies/Computing Physics Mathematics ***Design & Technology***	***Engineering Studies*** ***Building/Construction***		*Personal Finance* ***Applied ICT***
19	The Studio @ Deyes	**Engineering,** Fashion & Business		English Language English Literature, *Art&Design* *PE/ Sports studies* *Religious studies*	Mathematics Science: Double Award ***Design &Technology***	***Engineering Studies***		***Computer Architecture/System*** *Personal Finance*
20	Logic Studio School	Business, Creative Media, and **Computing**		English Language English Literature Geography History Polish Portuguese Spanish	Chemistry Computer Studies Mathematics		*Business studies, Multimedia*	*Personal Finance*
21	Bicester Technology Studio	**Life Sciences, Tech,** and Enterprise		Art&Design English Language English Literature Geography History Spanish	Biology Chemistry Computer Studies/Computing Mathematics Physics Science: Double Award	***Engineering Studies***	*Business studies, Multimedia*	***Applied ICT***

22	Queen Elizabeth Studio School	**Engineering, Materials, Engineering,** and others		English Language English Literature, Geography History Latin Spanish *Art&Design* *Business Studies,* *Drama* *Music Studies* *PE*	Biology Chemistry, Computer Studies/Computing Mathematics Physics Science: Double Award ***D&T: Food Tech Design &Technology***	***Engineering Studies*** *Speech & Drama*		***Health Studies*** ***Computer Appreciation*** *Sports Studies*
23	Chester International School	GCSE AND IB						
24	Scott Medical and Healthcare College *	**Medicine, social and health care**		English Language English Literature History French Spanish Performing arts	Maths Biology Chemistry Physics ***Psychology***	***Sports Science***		***Health and Social Care***

** Qualification data taken from school website as school changes academy status during 2018-2019, and so entry data was unavailable on the government website*

D2: Classification of SLTs across the four schools

Studio School DeGrasse	Studio School Sagan	Studio School Curie	Studio School Franklin
1 **Principal** /mathematics teacher	1 Head of School	1 Headteacher	1 **Principal** / engineering substitute teacher
2 School Sponsors	1 Principal of MAT	1 **Sponsor** / Employer Partner	1 School Sponsor
1 **Employer Partner** / Governor	1 School Sponsor	1 Head of careers and employer engagement	2 Employer Partners
1 **Vice Principal** / mathematics teacher	1 **Employer partner**/ Computing teacher	1 Head of Computing	1 Vice Principal
1 **Head of Science** / physics teacher/ biology teacher	1 Head of Science	1 Head of Technology	1 School Manager
1 Head of STEAM		1 Lead Curriculum Coach	1 Lead English teacher
1 **Head of Employment**/ Business teacher/ Business Liaison coordinator			1 **Lead science teacher** / chemistry teacher

Appendix E: Coding Frameworks and Key thoughts – Role of the Schools

Key items to highlight

- No student voice at Studio School Curie – but this is okay as there was so much data saturation seen across the other schools
- Staff voice includes SLT as it is impossible to separate responses that were given as principal or as in role as staff
    - Similar issue was seen in the case of some of the employer partners – at least 2 case study sites where employers also served as teachers
- These frameworks are the high-level themes that have been built for the different voices for the roll of the schools only.
    - Interview questions were framed around perceived role, school choice, marketing the school to the community, and what the importance of STEM were used (amongst others) to pull out main themes
- The numbers that are in parentheses indicate the number of interviewees in that group of stakeholders that alluded to that theme.

Studio School DeGrasse

Case 1: Studio School DeGrasse

1 Principal
2 School Sponsors
5 Members of Staff
4 Year 10 Students
3 Year 12 Students
2 Employer Partners
5 School documents
1 School bid document

Additional thoughts that link to the role of the school

- 1st year of school. Recruitment largely driven through the MAT
- Non -selective. but selection happens in 2 ways: 1) students are self-selecting in because they want the career, etc or there is selection that happens by other schools in the local area deciding which students should in fact be sent to the new school. Idea that even if you want to be selective or have a certain profile of student that you would like to see at the school, you must recruit numbers just to viable sometimes. So, the role of the school may drift because of the types of recruitment that you have had to do just to even remain open.
- Disconnect between what the MAT might think they might be doing for the schools in trying to set up a cooperative system, but the reality of what that means from a competition PoV.

Staff (incl SLT) Key Themes

- Teaching style (5)
- Personal feel (4)
- Challenging Secondary provision (6)
- Raising aspiration(6)
  Students (4)
  Community (2)
- Building engagement with subjects(3)
- Building confidence/maturity in students (6)
-'Feels different' (4)
- Future of work and life is STEM (3)

Staff welfare (2)

Students Key Themes

-Building Independence/ maturity (6)
-Preparation for real life (4)
- Specialist offer (5)
- Personalisation (7)
  Qualification Flex (3)
  Different teaching (3)
- Feels Personal / You're looked after (3)
- Feels like Family (6)
- Taken seriously (7)
- 'STEM is everywhere and everything'(4)
- For the outsiders – troubled/geeks

Sponsors Key Themes

- Skills for the now and future (2)
- Another choice for the local area(1)
- Links to local labour market(2)
- Secondary provision is boring (1)

Employer Key Themes

- Skills for the economy (2)
- Need a change in current offer (2)
- Students more confident / mature (2)
- Feels like family (1)

Studio School Sagan

Case 2: Studio School Sagan

1 Head of School
1 Principal of MAT
1 School Sponsor
3 Members of Staff
3 Year 10 Students
3 Year 12 Students
1 Employer partner
3 School documents
1 School bid document

Key thoughts

- High turnover of Staff – particularly heads
- Schools battled with reputation built by overall reputation of schools, behaviour from MAT, and high turnover of staff
- Flex of quals across campus, yet fractious relationship
- Example of rejection of role of champion of vocational education-only GCSEs offered
- No sense of community across the network of schools – feel disconnected
-Qualification choice constrained by costs and examinations

Staff (including SLT and Employer) Key Themes

- Fresh start (4)
  Alternative provision (1)
  For the outsiders (4) – Troubled/ Geeky
- Different type of teaching (3)
- Pathway to a job (4)
  Future of jobs driven by STEM (3)
- Raising aspiration (5)

Students Key Themes

- Fresh start (5)
  Bullied (2) / Not taken seriously (3)/ Geeky (5)
- Preparation for great STEM careers (4)
- Personal feel (3)
- Personalised learning(5)
- Recognition of a life and work influenced by STEM (6)
- Raising aspiration (5)

Sponsors Key Themes

- Pathway to a job
- Building maturity
- Preparing for life
- Responding to a skills gap

Studio School Curie

Case 3: Studio School Curie

1 Headteacher
1 Sponsor
6 Members of Staff
1 Employer Partner
4 School Documents
Missing data:
Students -Y10 and Y12

Key thoughts

-While there are issues with the MAT that do shape and control the role of the Studio Schools, there is an interesting dynamic in that the school partnership is described as free flowing that students could take courses on both sides of the school. While that is the vision that is espoused in the Studio School model that the students should be able to flow across these partnerships, it is not without friction. While the vision is to share power, there is not much of that and the school is in danger of becoming an annexe of the mother school.
- Really wanted to push beyond Science and Engineering (mostly science) that is taught in secondary schools particularly via the GCSEs

Staff (including SLT) Key Themes

- Specialism 'red herring' (4)
- Changing education (7)
  Building maturity (5)
  Belief in self worth (6)
- Access to all qualifications for personalisation (4)
- Preparing for a life influenced by STEM (7)
  Jobs for the future (5)
- Route into Success (6)
  Link to job (less

Employer Key Themes

- Creating more work ready to students
- Take education away from politicians
- Students more mature
- Students more prepared for world of work
- preparation for future jobs
- Solving the worlds most pressing problems

Sponsors Key Themes

- Creating more work ready to students
- Challenging factory like secondary provision
- Super successful careers in STEM
- Responding to a skills gap
- Raising aspiration

Studio School Franklin

Case 4: Studio School Franklin

1 Principal
1 School Sponsor
8 Members of Staff
3 Year 10 Students
3 Year 12 Students
2 Employer Partners
1 School bid document
3 School documents

Key thoughts

- School was not popular in the local area as views as competition for students and resources
- Initially dependent on the MAT for recruitment, but were starting to have more comprehensive recruitment from other places
- Initially recruitment had been largely of students who were more vulnerable/ needed more help. Had done a lot of work to shift that narrative so recruitment was more comprehensive

Staff (including SLT) Key Themes

- Another choice in spectrum (5)
- Creating pathways to appropriate careers (3)
- Fostering maturity and independence (9)
- Development for life (7)
  Preparing for STEM jobs and life (6)
- Challenging current curriculum delivery (8)
- Raising aspiration (5)

Students Key Themes

- Pathway to successful STEM careers (5)
- Fresh start (2- Year 10)
- Fostering Indpendence /maturity (6)
  More confident (2)
- Preparation for life (3)
- Raising aspiration (4)

Employers Key Themes

-Solving the next generation of problems (1)
- skills needed for the loca economy (2)

Sponsors Key Themes

- Responding to a skills gap
- Raising aspiration