CROSS-CURRICULAR EMBEDDING OF MATHS AND ENGLISH: THE JOURNEY OF AN FE COLLEGE AND ITS 'ME STRATEGY'

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Abstract

More young people are not achieving good qualifications in Maths and English, which is ultimately "socially damaging and economically unsustainable" (Coughlan 2013). In the UK, students continue to underachieve resulting in a higher number of retake exams, with the least progress made within FE colleges (Belgutay 2017). The growing pressure on teaching practitioners to embed literacy and numeracy within vocational areas (Casey et al. 2006) and to contextualise learning (Higton et al. 2017) have led to a profession using a variety of strategies with little reflective review and sharing of good practice. Utilising a single FE college case study, the purpose of this research was to investigate the role of cross-curricular embedding of Maths and English to support student achievement. A contemporary example of the cross-curricular approach for embedding can be found in the ME strategy used by the case study college and examined in this thesis. This strategy is characterised by the targeted focus on tools and/or changes in the planning, delivery and review of functional skills in main study programmes. The decision to pair both case studies and action research methods ensured a research framework for presenting results towards actionable solutions relevant to both college-specific policy and provisions, and wider professional applications and improvements. Findings showed that in the year of its use students studying GCSE Maths and English were consistent or exceeded achievement targets, whilst those studying Level 1 functional skills performed below expectations. There is a divergence in data however as student attendance was significantly lower than expected for GCSE delivery whereas functional skills was in line or above target. Overall staff felt using the ME strategy had improved their teaching compared to previous years, were more like to use embedding in vocational delivery. Although in some instances this felt 'forced' and dual tutors often felt unsupported with little training. Further discussion on the impact of these results on stakeholders, i.e. national government, SMT and teaching practitioners, and the role each of them play in defending a similar approach and what is required to secure improvements in the wider sector are discussed. The key recommendations prescribed included an Ofsted framework that rewards change, more opportunities for SMT to innovate and to form a community of practice for practitioners to participate in. Future research is required to further conceptualise the term embedding, and longitudinal research that can validate conceptual models presented within this thesis.

Authors Narrative

The rationale for carrying out this research stemmed from the FE college's active role in providing, what I considered, a unique approach to improving Maths and English. Senior leaders were active in driving this forward and staff were engaged in the process of making a difference. I was naturally confident in the belief that sharing good practice was fortuitous and inevitable. However, over the data collection period an unexpected Ofsted visit brought with it a sense of chaos within the organisation that even after 10 months, and at the point of submitting this thesis, the college had not fully recovered. Whilst the researcher had made no predictions on the data collected, an expectation that the FE college were moving forward positively was anticipated. Instead, the priorities in the aftermath of the inspection, including the departure of several active leaders in the organisation, led to the general deterioration of the strategy initiative. This naturally shifted some of the themes and focus for discussion that had been initially envisaged within the thesis structure. The attitudes of both staff and students had changed, and where it was once a flagship item on the college's agenda, other areas for improvement began to take priority. Mid-way through I had started to observe other problems within the college, often faced and less discussed by the education sector. As oppose to focusing on the granular detail of implementing a new strategy within an FE college that focused solely on comparative examination results, I was able to explore the college's reactions that influenced wider research themes such as culture, power and organisational change, including insights into the role of an FE practitioner in light of the new environment. Aptly this led to a change in the thesis title that continued to explore cross-curricular embedding of Maths and English, with the enhanced added narrative of the college's journey. The prospects of painting a richer picture presenting frontline FE that many researchers before me had not always been in the position to capture, was considered more valuable to the research community and an opportunity not to be missed. Even if in some instances this raised more questions than answers. Nonetheless, every effort was made to build recommendations that were more relevant and suitable to stakeholders at every level to initiate change in the sector, instead of mere grievance or complaints. Or, as Aristotle would say: *"it is not enough to win a war; it is more important to organise the peace".*

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Glossary of Acronyms

ALS/ILS – Additional Learning Support/Individual Learning Support

AoC – Association of Colleges

CPD – Continued Professional Development

DfE – Department for Education

ETF – Education and Training Foundation

FE – Further Education

FEFCE – Further Education Funding Council for England

HE – Higher Education

HMCI – Her Majesty's Chief Inspector of Schools

LLN – Language Literacy and Numeracy

ME – Maths and English (in relation to bespoke strategy)

MIS – Management Information Systems

NRDC – National Research and Development Centre for Adult Literacy and Numeracy

OECD – Organisation for Economic Cooperation and Development

Ofsted – Office for Standards in Education

SET – Society for Education and Training

SMT – Senior Management Team

Chapter 1: Introduction

1.1 Chapter Overview

This introduces the background for this research by highlighting the historical changes that have shaped provision of Maths and English education in the UK, including government initiatives and funding, which have failed to improve achievement within FE. A summary of the FE college case study is detailed and its ME strategy explained, including the rationale which the aims and objectives of this research are built. Finally, an outline of the thesis is summarised.

1.2 Background

Recognising the central place of Maths and English skills in society is long overdue (quoting Alison Wolf in Coughlan 2013). The Institute of Directors have said that so many young people not achieving good qualifications in Maths and English was "socially damaging and economically unsustainable" (Coughlan 2013). In relation to literacy, UNESCO (2018) have been at the forefront of global literacy efforts and advancing its vision of a literate world for all. Literacy is considered a driver for sustainable development in that it enables greater participation in the labour market, improves child and family health and nutrition, reduces poverty and expands life opportunities. Furthermore, in relation to numeracy, research from Pro Bono Economics estimates poor numeracy skills cost the economy £20.2 billion every year. Within this, the average cost to individuals is £460 per year. Substantial evidence shows the importance of maths and English with poor outcomes in employment (twice as likely to be unemployed), wages, health (correlation between poor numeracy and poor health is often associated with depression) and crime (a quarter of young people in custody have a numeracy level below a 7-year-old) if not achieved. Whilst the digital age presents us with more numerical data than ever before, and subsequently can do the mathematical processing for us, it still functions on data being entered correctly (National Numeracy 2018). Article 2 of the first protocol

Human Rights Act, protects the right to life and gives students' the right to education. No one can be denied the right to education that encompasses the right to: an effective education (that is adequate and appropriate), to access existing educational institutions, to be educated in the national language and to obtain official recognition when studies have been completed (Liberty Human Rights 2017; Equality and Human Rights Commission 2017).

A YouGov poll in 2012 gathered public opinion on how people feel about being illiterate or innumerate. It was argued that "there is a higher cultural stigma attached to being illiterate – not being able to read is being 'uneducated', not being able to do basic maths is 'normal'". However others argued that "although many math situations require reading skills, the ability to do basic math allows a person to function, budget and shop". One of the key themes raised found the undeniable complaint that those without the basic skills could never be independent, e.g. "… the written word is everywhere and it is essential to be able to read. I would feel isolated from everyday life and ashamed to say I couldn't read and have people do that for me" and "… if you were unable to do this you would wholly [be] reliant on other people" (Gardiner 2012). Furthermore, another common theme, were that illiteracy and innumeracy reflected both upbringing and, more relevantly, education (YouGov 2012).

Throughout the post-war period there have been many attempts to reform the UK education system (Machin & Vignoles 2006). The 1994 Education Act introduced a tripartite stream, which was largely abolished by early 1960s when comprehensive schools were established and all students could attend regardless of ability (Trueman 2015). A surge of popular adult opinion in 1975 found that 2 million adults were in need of help with literacy and numeracy (Hamilton and Hillier 2006). In a new era of neo-liberalism and dominant force of the Thatcher government, the National Curriculum was introduced within all state schools in England, Wales and Northern

Ireland, prescribing what pupils should be taught to ensure each was given the same standard of education (Gillard 2011a; Collins 2011).

In 1997, a report from the OECD on the findings from the International Adult Literacy Survey showed the UK to be near the bottom of a new league table of industrial nations. Following a review of adult basic skills by Sir Claus Moser in 1999, the government funded a Skills for Life strategy, setting ambitious targets for improvement. Core curricula in numeracy and literacy, with a shift in aim at young people, were aligned to programmes with performance in school-based subjects (Hamilton and Hillier 2006). As a result of the design for the National Curriculum, proposals for a new national inspection service for schools in England emerged. In 1992, Ofsted was set up following a period of sustained public criticism of state education (Elliott 2012).

The responsibility for assessing the quality of the provision supplied in FE was initially led by the Adult Learning Inspectorate (The National Archives 2001). Despite a change in management after the FEFCE was abolished, FE providers continued to be paid by qualification and payments 'by results': i.e. when a student or apprentice does not gain their formal qualifications from an awarding body, the institution receives less money. The tighter financial accountability required by incorporation arguably led to a more intensive utilisation of staff and a damaging focus upon productivity, performance and cost of teacher labour (Simmons and Thompson 2007).

After raising the education leaving age to 18, The Education and Skills Act 2008 required young people to stay in either full-time education or training, work based learning such as apprenticeships or part-time education if employed more than 20 hours per week (Gillard 2011b). Following a wider remit for services and subsequent admitted failings, the House of Commons Education committee called for fundamental reform to Ofsted (Elliott 2012). The introduction of linear GCSEs in September 2012 effectively prevented students from retaking the same test twice in one year. This addressed the widespread 'resit culture', which often saw pupils sitting units repeatedly

until they had achieved the desired grade (Gurney-Read 2016). Heavily criticised at the time, senior sources in FE were disappointed and reported as saying: "while the policy's intention to improve literacy and numeracy levels is well intentioned, the implementation is not having the desired impact in practice" (Offord 2017).

In the same period Michael Gove, in his role as Secretary for Education, commissioned Alison Wolf to review vocational education within FE colleges for young people aged 19 and under (Trades Union Congress 2015). Her final report found that low-level vocational qualifications had little or no labour market value and estimated 350,000 young people get little or no benefit from post-16 education. GCSE Maths and English, fundamental to employment, figures showed only 4 per cent of the cohort achieved during their 16-18 education. She added that "the funding systems established by government create perverse incentives to steer 16+ students into inferior alternative qualifications" (Wolf 2011). In response to Wolf, The Education & Training Foundation (2015) published a follow-up report that strongly promoted functional skills[1], after gaining widespread recognition across employers, as a path that benefits learners because they focus on acquiring skills that are valued. In addition it was vital for those who otherwise did not achieve a good pass at GCSE who had no other public certification of skills if removed.

With a mere allocated guided learning hours of 36 funded for a single functional skills subject (Wolf 2011, pp.158-159) and 50 hours for GCSE resit (Education and Skills Funding Agency 2017), it was no surprise that 80 per cent of students who study Maths and English failed to obtain a pass before leaving college. Average progress among students retaking English at FE colleges was -0.28 in 2016, compared with a positive rate of 0.44 at sixth form colleges and an average progress rate of 0.10 across all institution types. In maths, the rate for FE colleges was -0.31, compared

[1] Functional skills – essential skills needed for English, maths and ICT, were first introduced in September 2010 and officially replaced key skills (*ForSkills* 2017b).

to 0.36 at sixth form and -0.13 across all institutions. AoC chief executive David Hughes said the issue was complex: "It's clear that the vast majority of students who have not achieved at least grade C in Maths and English go on to colleges". Overall, approximately 70% of students moving on to colleges needed to resit one or both exams. "This scale of need makes it very difficult to compare colleges with schools where the numbers are usually very low indeed" he added (Belgutay 2017).

With ambitious government targets set in Maths and English qualifications, a perceived 'deficiency' in any of these areas presents a barrier to progress. As a result, students are more aware that progression routes are severely limited, resulting in a high number of individuals dropping out of learning before any examinations take place (Allan 2017). The increasing demands for good quality education by young people, and employers, indicate that educational institutions now face similar pressures that the business sector has been facing for decades (Salih 2008). Sir Michael Wilshaw, Ofsted boss at the time, went as far as to suggest that 16 to 19 should be done in school alone – "the FE sector is a mess – that's why the government is reviewing it at the moment… [core skills] are badly taught and results are pretty poor" (Burke 2016). However, criticised in popular press (see The Secret College Tutor 2014), those involved in FE draw attention that college tutors are expected to "do in 36 weeks what teachers fail to achieve in 11 years".

An emphasis on 'value for money' has started to lead conversations in higher education (see Office for Students 2018) and further education colleges in Northern Ireland (see Department for Economy 2018) respectively. It would be fair to assume that this will continue in the lead up to 2020, with reviews to establish the success of Maths and English provision in post-16 education. Ambitious plans have been set to ensure those who have not achieved a good pass in English and/or maths continue to work towards achieving GCSE qualifications, or an approved interim qualification, as a condition of funding (Hancock 2014). In response, and as an attempt to bring about consistency across a multitude of

qualifications, the Learning & Work Institute in partnership with Education and Training Foundation are set to introduce a "significant change" to functional skills provisions. Offered currently as an alternative to the 'traditional GCSE', they aim to promote and champion literacy and numeracy skills of students, in terms of both short-term exam achievement and long-term development in society (Department for Education 2017).

In summary, it is clear from the evidence presented so far that maths and English is a fundamental pre-requisite to becoming a member of a society and leading an enriched working life. However, as the evidence has started to show, poor maths and English achievement is a long standing issue in the UK; the cause of which resulting from limited funding and a 'blame culture' that exacerbates relationships between education establishments as they blame the other for its own shortcomings. In spite of this, policy through study programme and inspection has forced this issue as a priority for FE colleges, as an increasing number of students are not literate or numerate in their post-16 choices and are expected to close this attainment gap before entering the workplace or higher education.

1.3 FE College Case Study

A large FE college was involved in this research. The following section outlines its history, local area, competition and values, course provision and success rates.

1.3.1 History

The college opened in the early 1990's, after the reorganisation of FE in the East of England and the merger of three other colleges. Since its development, the college has run multiple sites in the local area and increased its enrolment to 10,000+ students across 1,500 full and part-time courses. It provides high-quality technical and professional education and training for young people, adults and employers ([redacted]).

1.3.2 Local Area

The local area is relatively prosperous although there are pockets of deprivation included in some wards within the immediate catchment area. Unemployment in the area are below the national average ([redacted]). The majority of local employment/industry groups include: professional, scientific and technical; construction; and, information and communication. In 2016, the local area recorded above national averages for job density [0.93 to 0.85] and average annual earnings [£34,199 to £30,233]. Furthermore, the area recorded 74 per cent economically active[2] residents aged 16 to 74 ([redacted]).

1.3.3 Competition and Values

The college competes with four further colleges and over 100 sixth form schools/academies, in the local area to service a total population of 1,176,700 people, of which 67,000 are aged 15 to 19 ([redacted]). Participation in post-16 education and training is high in the area and many schools provide post-16 courses ([redacted]).

The college's mission is centres around community. Its vision is to offer 'amazing experience with outstanding learning'. The college prides itself on achieving student success through valuing diversity, pursuing excellence, working together, being open, honest and innovative.

1.3.4 Course Provision

Provisions vary from entry-level to HE training, many of which include GCSEs/A levels, vocational qualifications and apprenticeships for young people (16 to 19). The college offers courses from a number of well recognised qualification awarding bodies, e.g. AQA, Pearson BTEC, City & Guilds, Gateway Access, and NCFE Functional Skills, in collaboration with a consortium of other colleges and universities. Similar to other colleges, it is primarily funded by the government and tuition fees, based upon the

[2] A person is described as economically active if, in the week before the census, they were: in employment, not in employment but seeking work and ready to start in two weeks or not in employment but waiting to start a job already obtained and available.

number of learners and type of course being followed, and inspected by Ofsted.

The college provides courses in 15[3] subject areas, which were subsequently categorised into four areas of interest by the researcher including: *Adult & Core* (A Levels/GCSE, Access, Adult and Community Learning, Entry and Additional Learning Support, ESOL and HE); *Arts & Health* (Arts and Media, Early Years and Health & Social Care, Sports and Public Services); *Science & Technology* (Science, Business and ICT, Construction and Engineering); and, *Work Based* (Beauty, Catering and Hospitality, Land Based, Work Based Learning).

1.3.5 Student Achievement and Success Rates

Table 1 summarises the college's achievement and success for 2015/16 and 2016/17 against national averages for main study programmes, GCSE Maths and English, and Functional Skills. In the majority of instances the FE college had improved success rates from the previous year and were above national average. There were areas where this was not the case, specifically achievement in GCSE English (ages 16-18) that is below national average by 10% and GCSE maths (ages 19+) by 11%. Similarly, functional skills maths provisions were lower than national benchmarks for Level 1 and Level 2 qualifications respectively. Whilst the data showed improvements, the college aims to go above and beyond national expectations in relation to Maths and English, and strives to achieve achievement averages similar to main study programmes of 85%+.

1.3.6 Maths and English

Students once enrolled onto their main study programme are allocated to functional skills or GCSE based on their qualifications on entry. Students who achieved grades F, G or U at GCSE would join Entry 3 or Level 1 Functional Skills; whereas grades E or D would join GCSE. Those with grade C or above are complete and not allocated to any additional sessions.

[3] Subject areas summarised to maintain anonymity and avoid subject-bias

The overall college timetable allocated over eighty Functional Skills lessons each week for 2017/18. Sessions, in the majority of cases[4], were mixed ability to include Entry 3 and Level 1 students. Class sizes varied from 1 to 30, with an average of 13 students to each group[5].

A typical student would attend a single ninety-minute session per week[6], in addition to optional workshops offered by the Maths & English department or learning resource centre for Functional Skills[7]. Students studying functional skills were entitled, at their own arrangement, to one hour additional 1:1 support from a learning coach in the resource centre. As part of their main study programme students varied as to their level of interaction with Maths and English, largely based on tutor discretion and relevant application to their chosen vocational pathway.

The Ofsted (2015) inspection identified:

> "*the proportion of learners achieving their English and mathematics qualifications, including higher grades at GCSE, was too low… [as a result] leaders and managers have implemented a robust strategy to improve outcomes on these courses, and early indications are that the steps taken have been beneficial.*"

To achieve outstanding by Ofsted standards, it is within their judgement that leadership have the necessary resources to sustain provision of very high quality in Maths and English (Ofsted 2018a). Examples of good practice in further education have been showcased on their website at Gov.uk (2015). An ME strategy developed at the case study FE college is outlined in the remaining sections of this chapter.

[4] Four sessions are allocated to include only Entry 3 students due to support needs.
[5] Calculated based on 81 allocated sessions and 1,058 students enrolled.
[6] Students that require ILS/ALS support are supported individually within their scheduled functional skills session.
[7] A typical student enrolled on GCSE would attend a single three hour session per week.

Table 1: Achievement and Success Percentage for 2015-2017			
	2015/16	**2016/17***	**National Average****
Main study programme excluding E&M	86%	88% ↑↑	86%
16-18	83%	86% ↑↑	85%
19+	91%	91% ↑↑	88%
GCSE English	9%	19% ↑	
16-18	5%	14% ↑↓	24%
19+	18%	41% ↑↑	39%
GCSE Maths	17%	23% ↑	
16-18	10%	19% ↑↓	20%
19+	34%	25% ↓↓	34%
Functional Skills English			
All	37%	56% ↑↑	55%
16-18	34%	54% ↑↑	54%
19+	46%	63% ↑↑	57%
Of which Entry	76%	79% ↑↑	76%
Of which Level 1	29%	50% ↑↑	48%
Of which Level 2	11%	31% ↑↓	40%
Functional Skills Maths			
All	47%	60% ↑↑	59%
16-18	40%	55% ↑↓	58%
19+	67%	74% ↑↑	62%
Of which Entry	88%	87% ↓↑	83%
Of which Level 1	23%	30% ↑↓	44%
Of which Level 2	12%	33% ↑↓	37%

*Note: ↑↓ First arrow indicates higher or lower than previous academic year. Second arrow indicates higher or lower than national average.

**National average based on overall % for 2016/17

1.4 ME Strategy

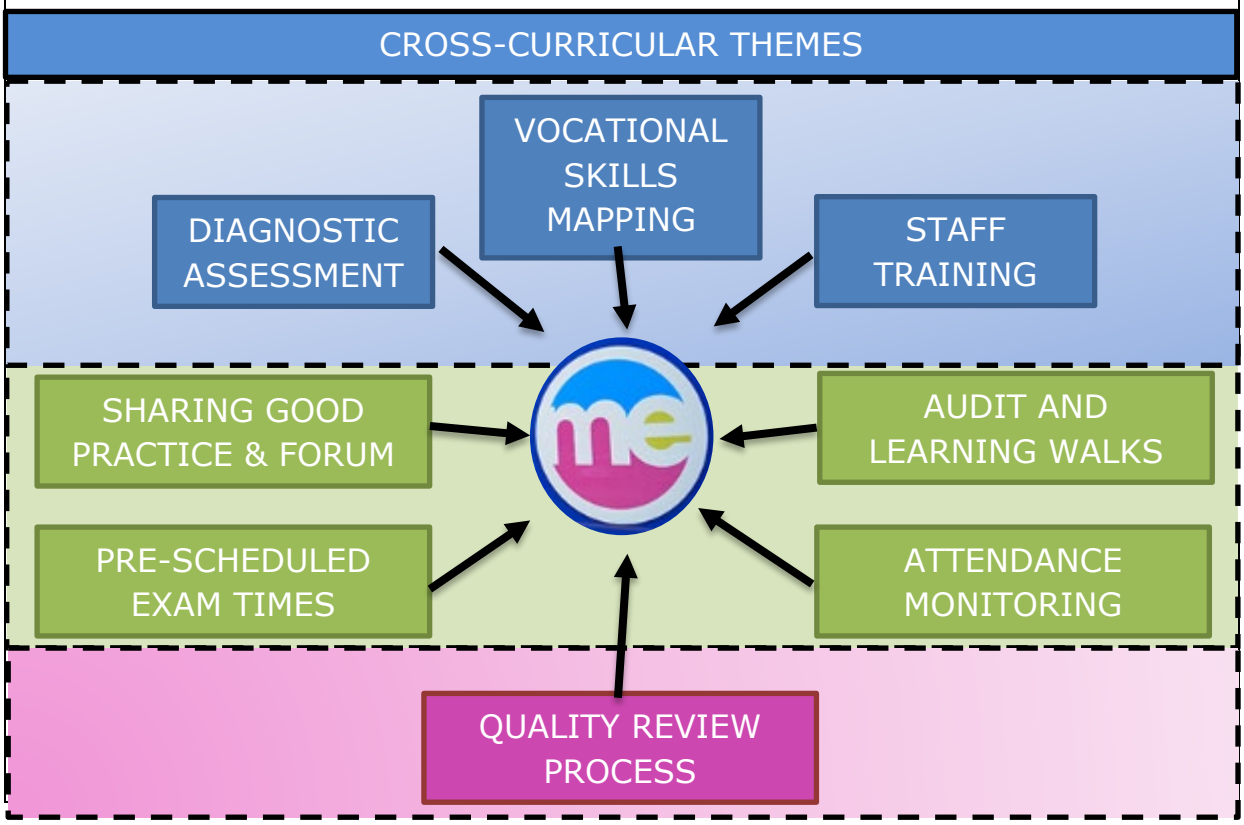
As part of the college's Maths & English (ME) strategy, SMT developed an approach that was shared college-wide to improve the quality of teaching and assessment, with a particular focus on embedding its functional skills development within vocational areas. The expectation were that students would take an approved qualification at a level beyond that already achieved, with the ultimate aim of progressing to grade C or equivalent in Maths and English at GCSE. Figure 1 illustrates the key areas of ME Strategy for academic year 2017/18. This illustrates several stages that the FE college chose to focus on in order to improve their provision for functional skills Maths and English.

> **Stage 1** – Planning: Practices and/or activities that were carried out before teaching delivery and were part of the planning period [August 2017 to October 2017]
>
> **Stage 2** – Delivery: Practices and/or activities that were carried out during teaching delivery and/or on-going throughout the academic year [October 2017 to June 2018]
>
> **Stage 3** – Review: Processes that were carried out at the end of each term and/or academic year [December 2017/April 2018/June 2018].

The college made the decision to remove the delivery and qualification of Level 2 functional skills for academic year 2017/18, focusing efforts on achieving Entry 3/Level 1 functional skills or GCSE[8]. The purpose of the ME strategy was to improve achievement in functional skills, and to bring consistency in college-wide approaches for both students and staff. The primary intention of this was for students to perceive the study of Maths and English as integral to their learning, and all staff required to support this through embedding in all aspects of main study programmes. A number of practical ways the local ME strategy was implemented to achieve this have been addressed within this section.

[8] Students with a grade D or equivalent at GCSE were enrolled on GCSE resit sessions.

Figure 1: Key areas of ME Strategy



1.4.1 Cross-Curricular Themes

Aim: To give direction and focus to support dual support between vocational tutors' embedding of maths and English with Functional Skills delivery (see Appendix 1 for themes).

Purpose: Bring consistency cross curriculum areas and increased teaching of Functional Skills content.

Responsibility & Monitoring: SMT directed and led by Head of Maths and English. Delivered by all vocational, functional skills and GCSE tutors.

Diagnostic Assessment

Aim: All students enrolled onto an academic course complete initial assessment and diagnostic for maths and English. ForSkills (2017a) is part of the NCFE group and operate as an e-learning provider for assessments.

Purpose: An individual learning plan is generated from results, which students must complete throughout the year to track progress made.

Responsibility & Monitoring: Personal tutors completed in first four weeks of term during PDR with all students.

Vocational Skills Mapping

Aim: During planning, at the end of the previous academic year, vocational and dual tutors from all curriculum areas, were asked to embed cross-curricular themes into vocational study programme schemes of work, regardless of level and/or those completing functional skills.

Purpose: Embedding of maths and English were identified during vocational planning and can be monitored throughout the academic year within observations.

Responsibility & Monitoring: Heads of Departments from all curriculum areas present schemes of work to SMT before the start of the academic year.

Staff Training

Aim: All vocational tutors teaching maths and English recommended to attend training sessions. Workshops varied from teaching techniques, developing schemes of work and assessing examination papers. These were delivered by external speakers and internal Functional Skills tutors.

Purpose: Support vocational tutors new to the role and on-going support for experience tutors.

Responsibility & Monitoring: Training organised and recommended by Head of Maths and English.

Sharing Good Practice Forum

Aim: Online forum via Staff Intranet as a means to share resources, ideas and questions.

Purpose: Sharing good practice between curriculum areas and to create a resource directory.

Responsibility & Monitoring: Optional use by all tutors who contribute and/or read comments.

Audit and Learning Walks

Aim: Independent external corporate audit, with a focus on maths and English and vocational embedding.

Purpose: Bring consistency across college and dual teaching of Functional Skills content.

Responsibility & Monitoring: SMT directed and led by Head of Maths and English.

Pre-scheduled Exam Times

Aim: Examinations pre-scheduled for students in set weeks throughout the year. All exams to occur during weekly scheduled Functional Skills sessions – differentiated by levels within different rooms.

Purpose: Improved organisation of exam scheduling and exam attendance.

Responsibility & Monitoring: Exams team and Head of Maths and English, with Functional Skills and GCSE tutors input and guidance.

Attendance Monitoring

Aim: To achieve college target of 92 per cent in maths and English. High risk students who do not attend were monitored and disciplined by personal tutors.

Purpose: Maintain high attendance throughout the year.

Responsibility & Monitoring: Heads of Department from all curriculum areas report to SMT in weekly meetings, with data breakdown and disciplinary monitoring.

Quality Review Process

Aim: To enhance the awarding body internal verification process, the college carry out termly moderation meetings to check for consistency in assessment. As part of the process, they examine common examination mistakes and share good practice with curriculum tutors.

Purpose: Identify areas of good practice in terms of assessment and feedback recommendations to tutors for teaching and learning.

Responsibility & Monitoring: Led by Director of Quality and Head of Maths and English, alongside a group of advanced practitioners from different curriculum areas.

1.4.2 Overall Design and Influences

It is worth noting that the ME strategy was designed and influenced by a number of on-going funding constraints after a series of annual financial cutbacks. Unlike primary and secondary school budgets, FE colleges do not benefit from the power of the parental lobby or high-level supporters who speak for higher education (Weale 2015). It then often prioritises monitoring and/or auditing strategies and initiatives, rather than investment into staff development. Reflecting on the ME strategy signals an over-emphasis on data-led review (i.e. diagnostic assessment, vocational skills mapping, audit and learning walks, pre-scheduled exam times, attendance monitoring and quality review process) and an under estimation on the importance in CPD (i.e. staff training and sharing good practice & forum). A real lack of funds to engage and combat the problem in terms of teacher training also exists in the wider FE sector (Ward 2018).

1.5 Research Aims, Questions & Objectives

This thesis looks to critically appraise the use of bespoke strategies as an example of policy design around Maths and English used within further education. The ME strategy, as presented in the previous section, signals a core part of the FE college's business that reflects the latest policy strategy. This is in response to the growing concerns for achievement in Maths and English among young people, in line with Government reform towards achieving long-term societal improvement.

The research aim were to *investigate the role of cross-curricular embedding of Maths and English within a further education college.* The research questions and relevant objectives are outlined below.

1. What is the impact of current practice to embed maths and English?

This will be addressed by conducting a review of the literature to recognise and understand the general views and practice.

2. How can the embedding of maths and English be studied in practice?

   This will be addressed by designing and adopting a mixed method research design to capture relevant primary and secondary data.

3. How is the embedding of maths and English implemented in practice?

   This is to be determined through the gathering and analysis of data to show evidence of embedding maths and English and its impact.

4. Can areas of current practice, good and bad, be identified?

   This is to be determined by reflecting on the data collection results in light of previous research and to share contributions to knowledge.

5. What are the lessons learned for improving maths and English outcomes?

   This will be answered by critically evaluating the research to establish recommendations for government, senior leaders and teachers.

The research questions were twofold. Firstly, objectives 1, 4 and 5 were towards exploring policy implications and improvements most relevant to research and practitioners in the wider education profession. Whereas objectives 2 and 3 were to work and improve further education-specific policy and provisions most relevant to the FE college.

1.6 Limitations and Scope

It was accepted that there were some areas of research that were influenced by a variety of other limitations and barriers, which research projects of a similar nature share. For this reason a number of these were identified, although could not be isolated within the FE college case study, and thus remained outside the scope of this thesis. Whilst not an exhaustive list, some of these considerations are identified and summarised below.

- *Comparison of vocational subject areas*: Variations between students enrolled from one course to another were assumed to be different and therefore deemed combative to compare one subject area with another. As a result, this study compares results of the entire college with national averages and breaks this down further to compare cohorts from the same subject area and/or curriculum department only.
- *Natural chaotic factors*: Similar to studies such as Casey et al. (2006), the degree of ME strategy and embedding may be one of many factors impacting the results of this study. Some factors have the potential to remain unknown, e.g. student motivations, changes to qualification grade boundaries or learning support needs, and could not be recorded or evidenced in this research.
- *Student experience*: Vocational and functional skills tutors were, in the majority of instances, from the same curriculum area. However there were few departments that shared human resources and these students had a different learning experience from others, i.e. majority of students would have had a tutor who taught them both vocational and functional skills, whereas few students may have had different tutors for each. Where appropriate this research highlights this only as and when it became intricately entwined with the research carried out.
- *Tutor suitability and motivations*: Tutors who taught both vocational and functional skills may have had more or less experience and/or CPD teaching than others within the college. Teaching hours were allocated by Heads of Department based on suitability and/or availability at the start of each year. In addition, achievement could generally be higher or lower, in part, due to some teaching practitioners being more drawn towards embedded approaches than others. Whilst this study gathers feedback from teaching practitioners it does not consider or explore their motivations or commitment.

To ensure the research's desired aims and objectives were achievable it was decided that the research would operate within these boundaries,

where factors would not be isolated or explored further. *It is also worth noting, at the time of this research, the UK was in a period of growth with public sector borrowing expected to be lower than previous years. National debt was set at a low 88.8pc of GDP and unemployment steady at 5pc (*The Telegraph 2017*).*

1.7 Thesis Outline

The thesis comprises of six chapters and provides a background to the research, a review of the available literature, description of the methods employed, a discussion of the data collected and, finally, a summary of conclusions drawn. The aim of each chapter are summarised below.

Chapter 1: The aim of this chapter is to establish a background context to the Further Education case study organisation used as part of this research. This chapter presents the aims and objectives of the research, and summarises the research scope and environment.

Chapter 2: The aim of this chapter is to conduct a review of the literature to further understand the expectations and role of Maths and English in further education. It reviews the following: historical journey of educational policy post WWII to present-, role of SMT in shaping provision-, and challenges faced by practitioners in planning, organising and monitoring student success-, in Maths and English. The chapter then summarises the gaps in the literature, which provide further context and background to the aims and objectives of this research.

Chapter 3: The aim of this chapter is to develop a research design to collect relevant data to meet the research aims and objectives. This chapter presents an overview of the research approach, philosophy and methods, together with the research design. Then the chapter summarises the data collection tools employed and how the data obtained from using the techniques were analysed as part of the study.

Chapter 4: This chapter presents the results of the study. The aim of this chapter was to summarise the qualitative and quantitative findings

obtained from the different methods employed in this study, and critically reflects on the choice of methods and research design.

Chapter 5: This chapter discusses the key themes and findings of the study. The chapter brings together existing literature and new research from this study relevant to the research aims and objectives. Discussions are presented in line with the researchers' own insights, limitations of the research design and recommendations for further work.

Chapter 6: The aim of this chapter presents the final conclusions and recommendations relevant to three influential stakeholders, i.e. national government, senior managers and teaching practitioners. The chapter then explains how the aims and objectives of this research have been achieved and summarises the author's reflections on performing action research.

Chapter 2: Literature Review

2.1 Chapter Overview

This chapter provides an overview of the relevant literature in order to highlight the prominent ideas behind educational policy and how government decisions and initiatives have paved the way on the delivery, management and expectations of literacy and numeracy in the UK. Firstly, this chapter introduces government strategies and subsequent trends over the last half century, and their role to develop the population's contribution to society through improved competency in Maths and English. Building on this, government expectations and standards affecting SMT and their role in shaping provisions for students is explored. This is followed by an exploration of the literature to identify some of the challenges faced by practitioners with Maths and English and their role in planning, organising and monitoring student success in practice. The difficulties faced at all three levels – government, SMT and practitioner - to improve student's skills in Maths and English is recognised, and gaps in the literature that lend itself to further research is summarised at the end of this chapter.

2.2 Historical Journey of Educational Policy: post WWII to present

Throughout the post-war period there have been many attempts to reform the UK education system (Machin & Vignoles 2006). This section looks at the impact of some key reforms which were designed to address a number of specific problems in the UK education system[9]; namely failing standards in education establishments, developments to provisions for 16-19 year olds, and the relative poor results identified in literacy and numeracy.

[9] Where possible research relevant to FE was preferred. In some instances government initiatives were more prevalent at primary and secondary level, and subsequently used when relevant to background and nature of education reform.

2.2.1 1940 to 1960

The Education Act (1944), otherwise coined "Butler Act", was a progressive piece of legislation that paved the way for: free secondary education for all pupils; establishment of the tripartite three 'streams', i.e. grammar, secondary and technical; and, a school leaving age raised to 15 [1944-72] and 16 [post 1972] respectively. Some would say revolutionary in the post-war era, it aimed to publicly provide primary and secondary education for all in an attempt to remove the inequalities that remained in the previous system (Living Heritage [n.d]). Under the tripartite system, pupils were allocated to each type of school on the basis of performance from a single exam. Sir Cyril Burt, a psychologist, was very influential in the establishment of this system. Burt believed that educational ability would typically be inherited by children and this ability could only be proved with this style of assessment. The more able students would attend grammar schools, as it was expected that these types of schools would provide a more formal traditional education compared to the other two types of schools, which would have varying degrees of vocational work associated with them (Trueman 2015). The initial response to the 1944 Act focused more on providing sufficient schools than on meeting the specific needs of individual students and increasing social mobility. The act did not attempt to control the secular curriculum, and the need for breadth and balance was implied rather than stated. Whilst the grammar school curriculum was examination led, it was free and unfettered in primary and secondary modern schools (The Guardian 2004).

Unsurprisingly by 1959, the Crowther Report – "Fifteen to Eighteen" pointed out that most 15 to 18 year olds received no formal education, despite the expansion of courses in secondary education and technical colleges. The report recommended that there should be more FE to prevent the wastage of talent of those who left school at age 15 to follow a craft or technical career (Trowler, 2003, pp.1-5). The report's main recommendation specified that "all pupils who have the ability to attempt some subjects should have the opportunity to do so, and about a third of

pupils should be given the chance to take external examinations [and] authorities and governing bodies should not judge their modern schools by public examination results" (Gillard 2010).

Before the start of the sixties, the 11+ were largely abolished and system for "all-ability" schools were established. However after a wave of criticisms, such as "in our headlong rush to educate everybody, we are lowering our standards" (Eliot 1949), the Beloe Report recommended a new exam system for pupils considered incapable of coping with the demands of GCE. The Certificate of Secondary Education (CSE) were introduced and increased the pressure on schools to divide students between 'academic' and 'non-academic' streams – with no real emphasis on either English or maths. Results from national testing were not monitored until 1948, showing only slight improvement up to 1952, which was widely attributed to a recovery in the education system after the war years (Brooks 1997; Gillard 2011c).

2.2.2 1960 to 1980

Comprehensive schools were introduced by the Labour government under Harold Wilson with the modus operandi that they serve a catchment area, whereby all students could attend regardless of ability. Wilson's government believed that this ensured all students stayed on a level playing field with no one child being labelled a failure simply because they did not pass an exam at the end of their primary education (Trueman 2015). Initial success followed large periods of complacency. National surveys of performance in reading continued to show the average scores remained essentially unchanged from 1952 to 1979 (Brooks 1997). However in 1972, a host of data was collected on adult literacy attainments. A group of 26-year-olds, who formed the sample, took the Watts-Vernon reading test and had also taken the same test in 1961 when they were aged 15. This genuine longitudinal evidence showed that 'a substantial general increase in reading

scores' occurred over the 11-year gap. An adult illiteracy[10] rate 'as low as one per cent' was subsequently recorded (Rodgers 1986).

It was therefore surprising that after the expansionist period of the sixties, the seventies saw a growing realisation that compulsory schooling, as developed since the war, had not achieved a basic education for everyone as hoped (Hamilton & Hillier 2006). After a series of BBC programmes in 1975 were broadcast a shift in public awareness grew identifying a large proportion of adults still had problems with literacy and numeracy. Programmes were linked to a telephone helpline and many people were encouraged to come forward for help. They received up to three hundred calls per week, and based on surveys among school leavers found that around 2 million adults were in need of help (Hamilton & Hillier 2006, pp. 2-15).

By 1976, educational policy was taking a decisive turn towards a modernistic vocationalism viewpoint (Hamilton & Hillier 2006). Labour Prime Minister James Callaghan gave a speech at Ruskin College Oxford reflecting growing public concerns that the UK was not being well-served by its schools (Parliament 2009). He said "I am concerned in my journeys to find complaints from industry that new recruits from schools sometimes do not have the basic tools to do the job that is required… the goals of our education, from nursery school through to adult education, are clear enough. They are to equip children to the best of their ability for a lively, constructive place in society and also to fit them to do a job of work. Not one or the other, but both…" (Trowler 2003, p.5). Callaghan's public articulation of these ideas, at the time, marked the end of existing consensus and new ideological underpinning for education policy-making that would follow the next eighteen years of Conservative government (Gillard 2011).

[10] 'Illeteracy' defined as a score of 11 or less on the 35-item test in 1972; corresponding 'illiteracy rate' for the same people aged 16 had been 3.5%

2.2.3 1980 to 2005

In a new era of neo-liberalism and dominant force of the Thatcher government, the Tories gave back LEA's the right to select pupils for secondary education. The move backfired, with the growing popularity of comprehensive schools underestimated. Instead, conservative ministers opted for rather more subtle policy initiatives aimed at establishing a wider variety of secondary schools and providing greater choice (Gillard 2011). The Cockroft report (1982) – Mathematics counts – established an inquiry into the teaching provision of mathematics in schools and the match between curriculum and skills required in FE. The report outlined the widespread misunderstanding among the public as to the levels of attainment in maths which are to be expected among school leavers, and how pupils should not be allowed to experience repeated failure (Gillard 2011). On the tail of Callaghan's report, the UK would see over a decade of high profile changes to the Council for the Accreditation of Teacher Education (1984), The Curriculum from 5 to 16 (1985), Technical and Vocational Education Initiative (1986) aimed at 14 to 18 year olds (Gillard 2011a). Furthermore, reports by Kingman (1988) and Cox (1989) on the teaching of English continued to guide policy during the John Major-era and Blair decade.

In 1988, 'The National Curriculum" was introduced within all state schools in England, Wales and Northern Ireland, prescribing what pupils should be taught to ensure each is given the same standard of education. Along with the new curriculum, GCSE exams for 16 year olds were taught for the first time (Collins 2011). The journey from primary and secondary schooling – Key Stage 1 to 4 – were largely prescribed by the government in terms of teaching delivery (statutory programme of study syllabus and scheme of work) and assessment (SATs and GCSEs). Structured around 'key stages' the "core" subjects of English, mathematics and science took centre stage, which within the first few years was subject to pupil testing and later co-ordinated by an independent inspection of teams as part of the Office for Standards in Education, later referred to as Ofsted (Parliament 2009).

The subsequent sections of this chapter briefly summarise the introduction of the national curriculum, appointed Ofsted inspectorate and programme funding for post-16 education and training.

National Curriculum

The National Curriculum has subsequently been reviewed and reformed on several occasions since (Parliament 2009). The first review in 1993 was a response to teachers' complaints that its testing arrangements were simply too unwieldy and, indeed, to proposed teacher boycotts of the Key Stage tests. Under John Patten, as Secretary of State, a revised version was introduced in 1995 that included a reduction in the amount of prescribed content, restriction of testing to the "core" subjects and replacement of the assessment scale to eight-level descriptors from ten (Parliament 2009). Controversy around the use of statutory tests soon became a topic of debate. Whilst originally conceived to provide information to guide teachers' practice, as well as information about the levels of attainment, soon "…this rapidly shifted and tests became an accountability tool. The data enabled comparisons between children, schools and local authorities to be made and was in the public domain. In other words, the 'league tables' were born" (Tymms & Merrell 2007).

In 1996, the Dearing Report raised concerns about the poor level of pupil performance in Key Stage tests prompted a number of parallel support projects. Modified under the title of 'National Literacy and Numeracy Strategies' they were subsequently expanded into the secondary phase and across more subjects to cover whole school issues such as behaviour and attendance (Parliament 2009; The Education & Training Foundation 2015). Inconsistencies between reports led to widespread controversy and confusion. In 1997, a report from the Organisation for Economic Cooperation and Development [OECD] on the findings from the International Adult Literacy Survey showed the UK to be near the bottom of a new league table of industrial nations. Following a review of adult basic skills by Sir Claus Moser in 1999, the government funded a Skills for Life

strategy, setting ambitious targets for improvement. Core curricula in numeracy and literacy were aligned to programmes with performance in school-based subjects. Skills for Life, with substantial funding, created a national curriculum for learners with a dedicated basic skills qualification structure and a set of professional standards to which practitioners had to adhere (Hamilton & Hillier 2006, pp. 13-15). The development of these qualifications from the literacy and numeracy standards of the Basic Skills Agency in 2001 formed the well-recognised 'key skills'.

Although less than four years after OECD's report, the Progress in International Reading Literacy Study (Pirls) tested the reading age of nine-year-olds and England reportedly came third out of 35 countries, behind only Sweden and the Netherlands. Later research challenged Pirls methodology, questioning the translation of a single reading test. Nevertheless, the report for the Primary Review concludes that "the general consensus is that this process is a successful one and it has been ongoing for generations" (Tymms & Merrell 2007). The National Curriculum continues to undergo revisions every few years (Parliament 2009), however evidence of the impact of these reforms is not comprehensive and evaluation of the national curriculum has not been possible since it was introduced nationally (Machin & Vignoles 2006). Whilst many of the reforms focused on primary and secondary education, FE colleges were directed and expected to operate under the same 'national' model and scope, including inspection by Ofsted, despite its inherent difference in nature and structure.

Ofsted

As a result of the design for the National Curriculum, proposals for a new national inspection service for schools in England emerged. In 1992, Ofsted was set up following a period of sustained criticism of state education by the Education Act. The new organisation was led by Her Majesty's Chief Inspector of Schools (HMCI) whereby teams of inspectors from both private sector and LEAs would bid to win contracts. Government policy was to ensure all schools were inspected regularly by a rigorous and transparent

process. Reports were to be written to a common format, graded on a seven point scale from 'excellent (1)' to 'very poor (7)' and made accessible to parents. Stewart Sutherland was replaced by Chris Woodhead, who would become one of the most influential and controversial figures in education. To his supporters he was a fearless upholder of traditional standards and critic of bad teaching. However his opponents claimed he was unfairly negative about state schools and used performance data in selection, and sometimes, misleading manner. Shortly after his appointment, he claimed that inspectors had found 15,000 teachers were incompetent and should be removed. Arguably the figure itself was not particularly contentious: it represented a mere 3 per cent of the teaching force. But furious union leaders pointed out that Ofsted lacked the data to uphold the claim.

In 1998, having reappointed Woodhead for another four-year term, Ofsted's responsibilities extended to include inspection of local authorities and teacher training establishments. The cycle of inspection changed from four to six years and, whilst this partly reflected the pressure of maintaining punishing inspection schedule of 20,000 schools ever four years, it also signalled an increasing question as to the rationale behind Ofsted. Inspection then changed to four, rather than a seven grade system, and major changes in 2005 placed emphasis on a school's own self-evaluation. It became difficult for them to achieve a good grade from Ofsted unless it undertook regular systematic self-evaluation throughout the year, including both observing teaching and tracking the performance of pupils and intervening with improvements when necessary. New HCMI, David Bell, went further to say "Commentators too often describe the past as some mythical golden age. The facts tell a different story… as the performance of schools has improved over the past years, it is only right that we have higher expectations" (Elliott 2012).

A number of studies have looked at the extent to which Ofsted has improved schools, e.g. Matthews & Smith (1995), Jones & Sinkinson (2000) and Rosenthal (2004). In some instances, the data is consistent with Ofsted

inspections having adverse effects on exam performance of those inspected (Rosenthal 2004, p.150). Furthermore, it does appear that Head teachers seem unconvinced that inspection is an effective way of securing school improvement. One study found two-thirds of Heads felt inspection did not lead to improvement, whilst another suggested only 35 per cent of schools felt the benefits of inspection outweighed the bad effects (Thomas 1999).

On the one hand, Ofsted inspections could be seen as recognition of how standards in teaching and learning were a high priority in the government's reform agenda. On the other, it may also have been indicative of an underlying aim to 'police' the sector (Gleeson et al. 2005; O'Leary 2012). It is no surprise that Ofsted inspection for schools and teachers left them feeling contrite, apprehensive, often characterised with words such as "dread" or "panic" and their very presence having the power to "strike the fear of god into any teacher" (Chowen & Fazaell 2013; Hurst 2013; Vince 2017). When observing quality of teaching, learning and assessment; Ofsted used generic lesson observation descriptors that were not overly helpful and lacked exposition of what they should 'look like' (For Schools Education 2013). Critics argued that using the same numerical scale of 1-4 would not make the exercise of evaluating practice any more reliable or valid than if the observations were ungraded or subject to an alternative form of summative assessment. This reflected a widely held belief that "assessment is not an exact science and we must stop presenting it as such" (Gipps 1994; O'Leary 2012). Despite these criticisms, provisions for Maths and English continued to be scrutinised and judged on outcome based success measures, i.e. results and attainment. For FE colleges, performance monitoring and accountability were stipulated by rules on funding.

Funding in FE

The FEFCE was set up by the Further and Higher Education Act 1992, and formally established in 1993. It took over responsibilities for allocating funds for the provision of FE from local authorities and, in some cases, from

the Polytechnics and Colleges Funding Council. Its responsibilities include the requirement to ensure that facilities for sufficient education within this sector are provided, to allocate funds to colleges and other institutions providing full or part-time FE courses, to advise the secretary of state for education on the provision of FE, and to ensure that provision is made for assessing the quality of FE (The National Archives 2001). In contrast to other 4-16 provisions, typically used by most European countries, funding is calculated based on an individual qualification rather than per-student basis. General FE colleges deal with large numbers of adults (19+) and although qualification-based funding has been used for both groups, adult funding is particularly complex. Over time, the money available for non-accredited courses shrank; leaving funds overwhelmingly qualification-linked (Wolf 2011).

In 2001, the FEFCE was abolished. Its responsibilities relating to the funding and provision of FE institutions and courses was taken over by the newly established Learning and Skills Council. The responsibility for assessing the quality provisions was taken over by the Adult Learning Inspectorate (The National Archives 2001). Despite a change in management, education providers continued to be paid by qualification and payments 'by results': if a student (or apprentice) does not gain their formal qualifications from an awarding body, the institution receives less money. The current funding system offers rewards after the event for those who have recruited and retained students, and whose students have achieved qualifications successfully – rather than operating with individual advance contracts under which they a 'deliver' a given set of qualifications (Wolf 2011). The tighter financial accountability required by corporation had arguably led to a more intensive utilisation of staff and a damaging focus upon the productivity, performance and cost of teacher labour. Also reduced professional autonomy for teaching practitioners, accompanied by an increased managerialism focus on expanding, controlling and intensifying the day-to-day work of teachers (Simmons & Thompson, 2007 p.175).

2.2.4 2005 to 2018

Over the last decade, government administration changes to the education department – Department for Children, Schools and Families (DCSF) and Department of Innovation, Universities and Skills (DIUS) – led to funding complications and 14-19 reforms. After raising the education leaving age to 18, The Education and Skills Act (2008) required young people to stay in either full-time education or training, work based learning such as apprenticeships or part-time education if employed more than 20 hours per week. In 2009, DIUS was abolished and its responsibilities subsumed into a new Department of Business, Innovation and Skills (BIS). In his first major speech on education, Gordon Brown told an audience of educationists that 'failing' schools would have five years to improve their pupils' GCSE results or they would face take-over or closure. The white paper – 'Your child, your schools, our future' – removed central government prescription of teaching methods and enabled networks of school-to-school support to help drive up standards in a 'new era of localism' (Gillard 2011b).

Functional skills – essential skills needed for English, maths and ICT, were first introduced in September 2010 and officially replaced key skills, outlined in section 2.2.3.1, in October 2012 (ForSkills 2017b). Across maths, English and ICT the number of qualifications achieved had increased from just fewer than 300,000 certifications in 2010/11 to just over a million in 2013/14. It was considered the most widely used non-GCSE qualification of its type, with certifications offered at Entry levels 1, 2 and 3, and at Levels 1 and 2. This represented near 7 per cent of all regulated qualifications in England, and outside of GCSE, were the highest volume of qualifications that Ofqual regulated. Designed to enable learners to apply their skills in everyday life, they could be contextualised for individual study programmes and recognised skills required by employers in the workplace (The Education & Training Foundation 2015).

Following a wider remit for Ofsted services and subsequent admitted failings, the House of Commons Education committee called for

fundamental reform and the organisation was split into two new inspectorates – one for education and the other for children's care. MPs thought too few inspectors had the relevant experience and called for more senior staff from schools to be seconded to Ofsted. A new framework for inspection was published, identifying a number of key areas inspectors had to report on, including pupils' achievement, teaching quality, behaviour and safety of pupils, and leadership/management. Some changes to classification such as the term 'satisfactory' were also replaced with 'requires improvement' (Elliott 2012). Secretary of State for Education during this period, Michael Gove, announced the appointment of Sir Michael Wilshaw to succeed as HMCI and shortly after his appointment made clear his intentions: "I believe we need radical improvements to the education system in this country… we've got to up our game… my view is that we have tolerated mediocrity for far too long – it has settled into the system". Amongst some long serving Head teachers his remarks were considered 'damaging and demoralising [for] dedicated professionals [and] the message that teachers will take is that the chief inspector sees them as part of the problem rather than the solution'. Similarly, teaching unions accused him of "trashing the school system" (Harrison 2012).

At the same time that there were changes to Ofsted, Gove commissioned Alison Wolf to review vocational education within FE colleges for young people aged 19 and under (Trade Union Congress 2015). Her final 200-page report was published in 2011, and found that low-level vocational qualification had little or no labour market value and estimated 350,000 young people get little or no benefit from post-16 education. GCSE Maths and English, fundamental to young people's employment, figures showed only 4 per cent of the cohort achieved throughout their 16-18 education. She went as far to suggest that one visible result of current arrangements is the virtual disappearance of Maths and English GCSEs from post-16 provision. Furthermore, she added that "the funding systems established by government create perverse incentives to steer 16+ students into inferior alternative qualifications" and a visible result of current

arrangements is the virtual disappearance of Maths and English GCSEs from post-16 provision (Wolf 2011).

Wolf, supported by Hodgen et al. (2010) identifies the UK education system as 'out on a limb' in terms of mathematics study in post-16 education. In the UK, fewer than one in five students study any mathematics after the age of 16. In comparison to 24 countries, where more than half of students in the same age group continues to participate. Furthermore, Wolf fervently suggests that in terms of progression functional skills qualifications that embody literacy and numeracy are fundamentally flawed. Considering them to be conceptually incoherent and the practice of embedding difficult, demanding and even if achieved are often 'embed to the point of vanishing'.

A number of recommendations in the report initially had the support of trade unions, such as concerns of shifting young people into a wholly vocational pathway at too young an age instead of retaining focus on broad education (Trade Union Congress 2015). Furthermore, reforms extending the school leaving age to 18 and insistence of Maths and English to at least grade C or equivalent at GCSE as a condition of funding were soon convention. However, critics raised a number of issues in meeting some of the requirements of Wolf's recommendations, e.g. the need for more qualified and experienced maths and English teachers, the use of 'stepping' qualifications such as functional skills to support student's learning and opportunities rather than restrictions of vocational pathways for those are not suited to an academic or linear diet (Igoe 2014).

If the Wolf report's recommendations were accepted, then schools and colleges would have to use other qualifications as a pathway to, and sometimes instead of, GCSE. Whilst free-standing qualifications for mathematics were readily available there were no comparable set of qualifications in English[11]. Therefore limiting FE choices and advocating for recognising only GCSE as the central place of English and mathematics in

[11] Some suggestions of qualifications similar to those used of English as a second/foreign language due to their large range and popularity were identified in the report (Wolf 2011)

'English life' and the duty of post-16 education to prioritise them. Funding at FE level continues to follow a 'pay by qualification' model, outlined in section 2.2.3, which Wolf (2011 pp.60-61) criticised strongly.

In response to Wolf, The Education & Training Foundation (2015) published a follow-up report that strongly promoted functional skills after gaining widespread recognition across employers, offering a path that benefits learners because they focus on acquiring skills that are valued and suitable for those who otherwise would have not achieved a good pass at GCSE subsequently who have no other public certification of skills they have acquired if removed. Whilst acknowledging the system could be improved, they argued it was not broken and the government should continue with the policy of investing in literacy and numeracy, and functional skills is a basis on which to build. The report also suggested that it should be viewed as an alternative route rather than a 'stepping stone' in its own right, with the key purpose of satisfying employer requirements.

As a result of the government introducing standards for post-16 learners on study programmes to continue studying maths and English, a means to identify exact skills level were required to assist providers when placing students on appropriate programmes of learning. With support from the Skills Funding Agency, centres were recommended to carry out initial and diagnostic assessment of their learner's maths and English skills. In addition, measures of 'progression' – those who progressed to a qualification at a higher level than their existing highest level of attainment – aimed to develop 'distance travelled' in Maths and English that could be reflected in funding claimed. These requirements would also be subject to Ofsted inspection and a tool for accurate assessment, transparent reporting and purposeful feedback (City & Guilds [n.d]; Department for Business Innovation & Skills 2014). A growing number of awarding bodies, e.g. City & Guilds, ForSkills, BKSB, NCFE and Excellence Gateway to name a few, offered a variety of online and/or paper-based services to the education market in order to meet standards. The literature lacks exploratory

evidence of initial and diagnostic assessment results, and comparative studies that explore distance-travelled could provide further insight as a means to measure student success, irrespective of pupil achievement in graded exams and thus provide the necessary support for maintaining use of functional skills in FE.

Change in post-16 standards also led to further developments for the inspectorate. Continued criticism of teaching observations, outlined in section 2.2.3.2, prompted Ofsted (2014a) to pilot a new approach to recording evidence about the quality of teaching during inspections. From September 2014, inspectors were no longer grading individual lesson observations, learning walks or equivalent activities. Instead each inspector was required to gather evidence and summarise this to reach a joint judgement about the overall quality. Although practitioners seemed unable to fathom such an overhaul, so much so that Ofsted (2017) produced a document in December 2017 to "dispel myths regarding inspections". A shift in practices has led to changes, such as the need to no longer provide individual lesson plans, self-evaluation, pupils' work and, once again, reinforcing the removal of lesson observation grading.

In October 2017, post-16 technical education reforms were published by the Department for Education (2017a). An ambitious framework with the aim of securing sustained skilled employment and promoting the government's commitment to fund the implementation of T levels. Offered as a technical option, with academic option previously established with A levels, are based on gaining a new technical qualification in collaboration with substantial work placement of up to three months; in addition to English, maths and digital content. Also, in partnership with ETF (2017) and the Learning & Work Institute, a functional skills reform programme is underway and provisionally set to be introduced in September 2019, with the purpose of improving curricular for functional skills. These reforms are a "significant change from where we are today: our current system does not always meet these aims. As set out by the Independent Panel on

Technical Education, students and employers must currently navigate a confusing and ever changing multitude of qualifications, many of which hold little value to individuals and are not understood or sought by employers" (Department of Education 2017).

2.3 Role of SMT in Shaping Provision of Maths and English

Until recently, the notion that activities and cultures of education either required managing or were, in any meaningful sense, 'managed', would have been regarded as heretical. However most FE share the fate of HE establishments that are being subsumed by a greater concern with the over management of sites, finance, staff, students and teaching, in order to demonstrate 'value for money' (Deem 1998). One of the combined effects of current funding regimes, government policies and quasi-market conditions is that SMT are finding themselves under pressure to do more work but with fewer resources (Smyth 1995; Cuthbert 1996). Leadership in the FE sector has become increasingly complex, with multiple and, at time, competing pressures (Collinson 2009). The institutional pressure comes from outside, i.e. Ofqual, Ofsted, Awarding Bodies, and inside, i.e. activities of managers and administrators re-organising, controlling and regulating work of staff and the conditions under which those staff work, the organisation (Trowler 1998). This section examines existing literature into the role of SMT for the: attainment and quality of provision; strategies towards planning, delivery and sharing good practice; and managing staff CPD; in relation to Maths and English.

2.3.1 Attainment and Quality

There are generally two types of argument to justify the use of quasi-markets in education, The first, and most common, is that introducing competition means schools and colleges must vigorously compete for students and the funding that follows them. Without such competition, the argument runs, monopolistic state providers can afford to rest on their laurels and allow productivity to fall. The second type of justification is

based on evolutionary economics, i.e. providers are given the freedom to generate different approaches, parents then select based on results, whereby superior approaches are amplified as popular schools expand and, conversely, unpopular schools shrink (Institute for Government 2012). The bottom line is that learning must be run like a business (Vance 2010, p.2).

During the 2012 Ofsted reforms a new framework for inspection identified the need to review leadership and management (Elliott 2012). In making this judgement, inspectors were to consider 'the strategic priority that leaders and managers give to the provision of English and mathematics to ensure that learners improve their levels of skills in these subjects compared with their starting points. To achieve outstanding, it is within their judgement to ensure [leadership] have the necessary resources to sustain provision of very high quality in Maths and English (Ofsted 2018).

There is general agreement that competence in literacy and numeracy is both important and necessary. However, despite the almost totemic status, there is little evidence that FE is delivering outcomes so frequently ascribed to it or hoped for it. Standards of attainment for students in maths and English is still widely held to be too low – especially those comparable courses in countries such as France, Germany and Sweden (Hodgson & Spours 1997, pp.88-89), and more recently Singapore, Japan and China (Coughlan 2012; Teaching Times 2017). Whilst government targets vary each year, the national average for repeat GCSE Maths and English were 24% and 39% respectively for 2016/17. This is higher for functional skills provisions that generally vary between 55-60%. In comparison, main study vocational programmes consistently achieve 85% or more. And yet, the journey of student achievement prior to FE is often overlooked.

Government results for the % of pupils achieving the expected level (level 4 or above) during Key Stage 2 tests exposed a third of 11-year olds were still struggling in the 'three Rs' – reading, writing and mathematics. Similarly the proportion of children achieving above the expected level had

fallen in both reading and writing (Gibb 2011). Table 2 summarises key national figures of Key Stage 2, ages 7-11, results 2007 to 2011 in the UK.

Table 2: Key National Figures % of pupils achieving the expected level (level 4 or above) in Key Stage 2 Tests

Subject	**2007**	**2008**	**2009**	**2010**	**2011**
English	80	81	80	80	81
Reading	84	87	86	83	84
Writing	67	68	68	71	75
Maths	77	79	79	79	80
Both Maths and English	71	73	72	73	74

(Gibb 2011)

Results show that at national level, over this period, over a quarter of pupils aged 11 were not achieving the appropriate Key Stage 2 level in both Maths and English for their age. The same cohort of students when sitting their Key Stage 4 tests, equivalent to GCSE aged 16, including Maths and English, are summarised in Table 3. The results indicate from the same cohort of students, even more continued to achieve below the expected level, with almost half not achieving 5+ GCSEs including Maths and English.

Table 3: Time series of GCSE and equivalent entries and achievement, including percentage of pupils making expected progress					
	2011/12	**2012/13**	**2013/14[12]**	**2014/15[13]**	**2015/16[14]**
5+ GCSEs or equivalent including E&M	59.4	59.2	53.4	53.8	52.8
English expected progress	69.2	71.6	72.9	72.4	--
Maths expected progress	69.8	72	66.6	68.1	--
(Department for Education 2016a)					

A report in 2014, found schools would often 'cherry-pick' students – usually those considered 'less academic' – to attend colleges as oppose to sixth form (Boffey 2014). It is no surprise that 80% of students who study Maths and English fail to obtain a C at GCSE before leaving college. Average progress among students retaking English at FE colleges was -0.28 in 2016, compared with a positive rate of 0.44 at sixth form colleges and an average progress rate of 0.10 across all institution types. In maths, the rate for FE

[12] Results account for Wolf's review recommendations which restrict qualifications counted, prevent any qualification from counting as larger than one GCSE and cap the number of non-GCSEs at two per pupil

[13] Ibid

[14] For comparative figures, results based on same methodology used (see Department for Education 2017b). Due to change in results classification for Maths and English, expected progress no longer measured and replaced with 'Attainment 8' measures

colleges was -0.31, compared to 0.36 at sixth form and -0.13 across all institutions (Belgutay 2017).

As recognised by AoC chief executive David Hughes said the issue was complex: "It's clear that the vast majority of students who have not achieved at least grade C in Maths and English go on to colleges and that means for some colleges the numbers are quite staggering". Overall, about 70% of students moving on to colleges needed to resit one or both exams. "This scale of need makes it very difficult to compare colleges with schools where the numbers are usually very low indeed" he added. "It also means that there is a wide range of ability levels of students arriving at colleges with some requiring a little extra work to achieve a grade C, but others needing more intensive support, time and motivation to help them progress" (Belgutay 2017).

In the face of these challenges with student attainment, Randle & Brady (2006) argued that the swing from an 'allocation' to an 'earning' model represented a shift "from an unequal struggle with a capricious allocator of funds, to the need to attract, retain and delight paying customers". The drive to increase student numbers was perceived by some to have caused a serious dilution in the quality of educational provision in some areas of a college. The question of quality came under debate and definitions provided by experts and quality gurus such as 'conformance to requirements' were promoted; hence however inferior a product may be in absolute terms, it was regarded as having quality if it consistently met standards that beat competition (Wilkinson & Willmott 1995; Randle & Brady, 2006 p.130).

The increasing demands for good quality education by students and society imply that educational institutions now face similar pressures that the business sector has been facing for decades (Salih 2008). As a result of working within these parameters, SMT attempts to increase quality in education is to provide a cost-effective product to a wider section of the community. A paradoxical effect also means they must choose qualifications that consider how much of the potential student population

could be served. For example, "…Putting it very fundamentally, you can have fewer students and give them a Rolls Royce experience or you can have millions of students, each of them getting a Mini". Quality, viewed from such a perspective, does not conform to commonly held assumptions of an association with goods or services being delivered of a superior or exceptionally high standard (Randle & Brady, 2006 pp.129-130).

2.3.2 Strategies for Planning, Delivery and Sharing Good Practice

The choice of 'functional skills' – also termed 'key skills' or 'core skills', have become central to debates around post-16 education and training, as identified in section 2.2.4 (*see* Wolf 2011). Functional skills underpin and complement many of the key processes in English and mathematics that enable pupils independently to: apply and adapt their knowledge and understanding to a range of contexts; solve problems in familiar and unfamiliar situations; and gather, interpret and communicate information effectively and confidently (Department for Children, Schools and Families 2010). However, despite one million qualifications being awarded every year, their 'credibility and value needs to be recognised by ministers' (Henshaw 2016). Its continued use by SMT within FE colleges could largely be down to the fact that students who have functional skills will be in a better place than one who has neither functional skills nor GCSE. And, if reformed, more difficult GCSEs are to be increasingly out of reach for applicants (Watkin 2016). As functional skills qualifications can be an essential gateway to progression, it is particularly important that awarding organisations make sure that they are accessible to all (Ofqual 2015).

More recently, the DfE commissioned research to build a better understanding of approaches and strategies to effectively plan and deliver post-16 mathematics and English provision. Some of the key findings suggested that cultivating more positive student attitudes in order to improve students' motivation and attendance is key and there should be a range of strategies developed to overcome this. Similarly, providers were

often in need to cultivate a positive mental attitude amongst students to increase motivation and confidence to retake their qualifications (Higton et al. 2017). Supporting the delivery of functional skills is typically offered by the selected awarding body (see examples at City & Guilds and NCFE).

However Matthews (2009) had previously argued that it falls on the shoulders of SMT to connect and engage best practice through strategic recommendation and intervention. The dichotomy between "training like seals" and "leaving teachers alone" is an example of what Watzlawick et al. (1974) terms "the illusion of alternatives": if we accept this then we are trapped in the idea that these are the only two possibilities. This is symptomatic of the approach towards educational change that has for a long time dominated the thinking of reformers (Korthagen 2001). McCarthy & Bagaeen (2014) recommended that good practice in the provision of planning education are: assessment feedback; online/virtual teaching; use of social media; study visits; enhancing employability/providing linkage with practice; reflective learning; use of specialisms; to name a few.

To support this notion of 'sharing good practice', the Department for Education (2009) had recommended the increased use of lesson study[15]. First developed in Japan, it is built on the premise that the best way to improve education is to 'get teachers together to study the process of teaching and learning in classrooms, and then devise ways to improve them' (Department for Education 2009). In the kinds of practice transfer imagined by SMT and policymakers, practitioners openly share their ideas, resources and opinions with others. However, it has been shown in some studies such as Fielding et al. (2005) that teachers worked together for almost three years before they felt confident enough to recommend an approach to others in their own school. They were often inarticulate about their own good practice or unable to express what it is they are good at in ways that enable others to learn from. In 2014, reports warned that a

[15] lesson study (def: a detailed study of the practice of teaching).

shortage of "rigorously educated teachers" lacked the basic knowledge needed to deliver new Maths and English in lessons (Paton 2014).

2.3.3 Managing Staff CPD

The need for CPD, especially for those teaching vocational subjects and, in addition, Maths and English is often sought after. Whilst a priority for some, concerningly 60% of practitioners reported spending no time at all on it (Greatbatch & Tate 2018). The latest report also suggested that senior leaders in FE often have an "insufficient focus on teaching learning and this can lead to a lack of CPD to enable FE teachers to improve".

The government had previously announced that they would reward graduate maths teachers who choose to teach in an FE college with a £10,000 bursary. Furthermore, colleges would receive up to £20,000 if they recruit a specialist maths teacher and given £30,000 if they shared their teaching expertise with other colleges and learning providers (Young 2014). At the same time, there were also a number of subsidised enhancement programmes in Maths and English to help FE lecturers teach the growing number of students preparing for resits and functional skills (Offord 2013a). As a result there were a growing number of FE colleges who utilised vocational tutors for the delivery of functional skills maths and English, despite of or before any training were complete. Research by Casey et al. (2006, pp.11-14) found that learners were twice as likely to fail when practitioners were asked to take dual responsibility for teaching vocational and LLN, or were solely taught by non-specialist LLN practitioners. This has largely been attributed to the current shortage in specialist teachers, together with the lack of subject expertise among vocational tutors (Greatbatch & Tate 2018).

Leaders in the FE sector operate in an environment characterised by changes in policy and funding, as well as wider economic and societal shifts. In 2009, a survey of college principals on the changes in their role revealed that it had evolved significantly from that of chief academic officer to one that combines responsibility for academic matters with that of being the

chief executive of a multimillion pound business (KPMG 2009; Greatbatch & Tate 2018). With the rise in students needing to achieve Maths and English, funding restrictions to simultaneously attain and cut costs, and the on-going need to support staff training highlights the need for further research to explore new and/or alternative strategies used by SMT to shape provisions for Maths and English in FE colleges.

2.4 Challenges Faced by Practitioners in Planning, Organising and Monitoring Student Success in Maths and English

The Secret College Tutor (2014) in an article titled 'College tutors can't do in 36 weeks what teachers fail to achieve in 11 years' states: "I have seen teachers spend hours making resources relevant to what students are training in. But, as soon as you put 20 learners in a room to repeat a subject they've hated for years, there's a huge problem". Research carried out by Liem et al*.* (2008) found that when students carried out English-related skills and knowledge they were more likely to give up or disengage in their learning when they faced difficult and uninteresting academic tasks. This finding was also consistent with the proposition that the antecedent of a performance-avoidance goals were inherently negative, e.g. fear of failure, rejection or low perceived competence. Likewise, later studies by Martin et al*.* (2012) found perceived disengagement predictors to include self-efficacy and anxiety, when participating in mathematics. Whilst both studies identify some key insights into student's sensitivity of the subject areas, samples for both research focused on secondary school students and further empirical investigation in FE would be valued in light of college students' different experiences and needs.

Strategies to 'engage the disengaged' however are both popular and vast in the literature. Support programmes often include more than one approach to support students at risk of disengagement such as employer involvement, alternative curricula, careers guidance, to name a few (Kettlewell et al*.* 2012) in relation to main study programmes. As a more

formalised approach, embedding[16] of Maths and English, have been recommended and championed by Ofsted (2014b), *AoC* (2014) and teaching practitioners such as Sharrock (2016), Gravells (2017) and Petty (2018). Embedding within vocational courses have shown visible improvements to learner's achievement, i.e. the proportion of learners gaining a literacy qualification was more than 35 per cent higher where there was some degree of embedding; when LLN was fully integrated this difference rose to over 42 per cent (Casey et al. 2006). The same authors concluded that successful embedding was not just a question of putting structural features in place, but also of teamwork and shared understandings and beliefs.

This section examines the literature further on the use of embedding by teaching practitioners, in addition to assessment support measures and the significance of attendance towards achieving student success in Maths and English. A direct comparison between GCSE and functional skills, including its delivery, is then summarised.

2.4.1 Embedding

Abbot & Edmiston (2006) consider pedagogy on a continuum between a pedagogy of answers and a pedagogy of questions; whereby the first is grounded in metaphors of 'covering' or 'delivering' and the latter on 'exploring' ideas and 'discovery' learning. The current general interest in pedagogic practice derives from wider social and economic policies to raise educational standards, including pressures to increase the numeracy and literacy skill levels of the population to compete in a global economy. This policy interest tends to bias the focus on pedagogy to general technical teaching prescriptions (Corbett & Norwich 2005), i.e. 'pedagogy of answers'. However, what practitioners come to appreciate more is the concept of effective teaching, where research have shown that a practitioner's holistic approach, i.e. 'pedagogy of questions', to self and

[16] For the purposes of this research, defined as combining the development of learners' LLN with that of vocational and other skills (NRDC 2006)

practice is ultimately more effective (for examples see Biggs 1999; Korthagen 2004). The challenge for educators is how to foster learners capabilities "of doing new things" while simultaneously teaching "what other generations have done". This "double-edged sword of pedagogy" (Bonawitz et al. 2011) should also be considered when developing and implementing curriculum strategies for maths and English that requires both effective teaching in a results-driven era (Perryman et al. 2011).

The use of "cross-curricular themes" has been adopted by education providers in relation to health, careers, underpinning values, environmental issues, to name only a few (Amadio 2013; Whitty, Rowe & Aggleton 1994). An in-depth review of embedding LLN skills by Casey et al. (2006) identified a scale of "embeddedness" that broadly included: teamwork between LLN[17] and vocational tutors; staff understandings, values and beliefs; aspects of teaching and learning that connect LLN to vocational context; and, policies and organisational features at institutional level. The same research identified the need for tutors to take ownership of maths and English delivery (Casey et al. 2006, pp.28-31) rather than treating them as if they were 'bolted on' to main study programmes. In times of stretched resources colleges are forced to make tough choices about whether they are able to provide the same level of support to students unable to acquire GCSE (Okolosie 2013), and will often exploit their staff to deliver functional skills.

Casey et al. (2006) found that some practitioners were not convinced that they should teach English or maths as a vocational tutor in the first instance. Whilst some take on dual responsibility, being both dual-qualified and experienced, most are vocational tutors taking on additional responsibilities. The new requirements on vocational tutors also led to significantly increased workload and more complex assessment as they were required, for example taking into account spelling and grammar when assessing subject knowledge. Anecdotally, there have been reports of tutors spending twice as long on marking. Their proportions of contact time

[17] LLN (def: literacy, language and numeracy)

and administrative time, some would argue, should be adjusted in light of this (Harden 2015).

The attitude of vocational staff towards literacy and numeracy is ever more critical; whilst for some embedding is a new name for a familiar approach previously known as 'integrated' or 'linked' or contextualised', for others it is uncharted territory (Casey 2005). Gravells (2017) promotes that teaching practitioners ensure their embedding skills are realistic and relevant to enable learners to engage with real situations in their vocational subject area. Likewise it is recommended that staff have at least a Level 2 qualification in Maths and English to feel confident embedding them and in effectively giving feedback to learners (Langstreth 2015). However the reality, as highlighted by Marina Gaze in her role as Ofsted Deputy Director for skills, is that not all vocational tutors have the confidence and ability in their own Maths and English to fulfil the requirement. She goes on to say "this is not a failing on their part – their skill sets were the basis of their employment and now the goalposts have been shifted" (Harden 2015). Despite £30 million being invested in recruitment and training, recruitment is often from the "same crop of talent [and] there are simply too few decent teachers to go around" (The Secret College Tutor 2014), see section 2.3.3 for further details on managing staff CPD in relation to Maths and English.

When it comes to the wider debate about teacher workload, remarks are often futile. Nicky Morgan, Education Secretary at the time, suggested that "teachers were spending too much time marking or writing up lesson plans instead of focusing on teaching" (Clarke 2015). Though her remarks were later derided by teaching unions, the need for lesson plans, schemes of work or course guidelines are a fundamental part of a teaching practitioners administrative duties. A poll in 2012 found that teachers worked an average of 48.3 hours a week, and 55% of them would regularly work 56 hours a week during term time. It also highlighted that 48% of their time was spent preparing classes compared to being in the classroom with pupils (Gardner 2014). Any additional time spent on planning and finding ways to embed

Maths and English may or may not be a priority for some practitioners despite a variety of resources available at the Department for Education (2018) and ETF (2018a) to name but a few.

Wolf (2011), as mentioned in section 2.2.4, considers the practice of embedding difficult, demanding and even if achieved often 'embedded to the point of vanishing'. It has however been suggested that vocational tutors can help to overcome the stigma associated with LLN classes. Building on this they proposed that both vocational and LLN specialists working together to embed LLN is preferable, and learners who received ALS/ILS support were likely to complete their course than those who did not (Casey et al. 2006, p.16, p.31). Encouraging vocational tutors to work with functional skills, and GCSE, staff so that they are aware of learners' areas for development, appropriate SMART targets are set for Maths and English, and to inform vocational sessions is superlative (Langstreth 2015). Also, as mentioned in section 2.3.2, it has been argued that SMT, who have the oversight over all curriculum areas, are key to connect and engage best practice through strategic recommendation and intervention. The need for additional research is sought after to identify areas of good practice in the planning and delivery of Maths and English by SMT in relation to main vocational study programmes. Likewise, examining practitioner perspectives of embedding and how this has been carried out in FE successfully to improve examination results is lacking in existing literature.

2.4.2 Assessment Support and Attendance

Tests and examinations at all stages of education are considered an important and powerful tool for decision making in a competitive society, with people of all ages being evaluated with respect to their achievement. The stress involved is thought to prevent some individuals from reaching their academic potential (Rana & Mahmood 2010). It has been found that students consistently perceive exams as a source of increased anxiety and a situation engulfed with uncertainty/unfairness in letting them demonstrate their true achievements (Zoller & Ben-Chain 1990). Perry

(2004) suggests that math anxiety, in particular, is extremely common phenomenon among college students.

In response, the literature is engulfed with recommendations on dealing with exam stress and engaging with support in the lead up to exams (see Student Minds 2016; BBC 2017; Bhardwa 2017; NHS 2017). The Guardian Teacher Network (2014) promotes good practice of practitioners who use a number of techniques to help settle students' nerves including: creating mind maps of information rather than writing out notes over and over again; explaining a topic to a parent or friend; and avoiding last-minute cram outside the exam hall because it will only lead to higher levels of stress. Furthermore, doing a 'best question' first to create a feel good factor, working in groups to create advice guides and a revision recap prior to the exam. Whilst practitioners make every effort to relieve some of these pressures, Childline delivered 3,077 counselling sessions about exam stress to pupils in 2015-16 alone, an increase of 9 per cent on the previous year (Bloom 2016). Due to the current government-enforced pressure to succeed in Maths and English, a perceived 'deficiency' in any of these areas presents a significant barrier to progress. As a result, students are more aware that progression routes are severely limited, resulting in a high number of individuals dropping out of learning before any examinations take place (Allan 2017). Central therefore to raising standards is ensuring all pupils can fulfil their potential is to attend education regularly to benefit from their education (Department for Education 2016c).

Research on student achievement confirms that performance can be influenced to attendance. It also seems possible that providers can take two paths toward strengthening the attendance-achievement relationship by limiting absences and promoting attendance (Roby 2004; Gottfried 2009; Department for Education 2016b). Initiatives to deter parents and/or guardians to take leave during term-time, appears to have curbed absenteeism at primary and secondary level (Hantsweb 2015) however reasons for absences in FE are multifaceted. Reasons often include

sickness, transport difficulties, person/family problems, financial hardship, timetabling and work commitments. Whilst staff expect 100% attendance from their students, when students allow their attendance to fall below 92% their performance begins to deteriorate. Other findings also showed that attendance rate for 'key skills' were lower than those other sessions (Learning and Skills Council 2012).

Many colleges vary how they follow-up with students after absence as part of their college attendance and/or absence policies. From a practitioners view, when students attend it allows them to focus their class teaching for learning outcomes (Lukkarinen et al. 2016) and the process of tracking progress can be maintained. Individual learning plans (ILPs) are a common resource to ensure a student's current level of ability, and specific goals, are recorded for future attainment. Most practitioners see the advantage of following their learners' progress on a regular basis (itslearning 2016). Success has been well recorded and evidenced in further education (see ETF 2018b), and continues to form part of Maths and English provisions.

Much of the existing literature focuses on the lead up to exams and there is little evidence as to advice, guidance or approaches to manage the assessment day. Further insight into the support that could be in place when making exam arrangements and monitoring attendance towards improving the student experience is sought after in the literature.

2.4.3 Functional Skills vs. GCSE Teaching Delivery

Much of this literature review has drawn comparison between functional skills and GCSE. It would be appropriate to establish some of the similarities and differences between the two provisions and their delivery.

A summary of the curriculum content for GCSE and functional skills Maths and English are summarised in Table 4. This shows that much of the course content is similar in nature, in terms of measuring a learner's skills and aptitude in both Maths and English. For example in English, learners are expected to showcase skills in reading, writing and presenting; and in maths, overlapping topics include calculations, fractions, decimals,

percentages, ratio and probability. The key differences appear in the form of grading and assessment. Whilst GCSEs have always operated on a tiered system – A* to F – or scaled – 1 to 9, functional skills are split by level (E3, 1 and 2) and credit pass/fail accordingly. In terms of structure, both involve multiple exam elements; however, the style and context of questions varies considerably. Figures 2 and 3 shows examples of both GCSE and functional skills Maths and English-based mock exam questions from recent awarding body guidance.

It has been suggested by Vinson (2015) that the key difference between GCSEs and functional skills is that the former is to test academic ability, and the latter exists to see how they can apply knowledge in everyday situations. Some argue (see Wolf 2011 and Watkin 2016) that GCSE qualifications are more rigorous, more demanding and therefore more valuable and respected by employers. To enter students into a supposedly lesser alternative would be to do them a disservice because their future prospects will be less bright if they do not have a GCSE. On the other hand, critics have said that functional skills courses, following recent reforms, are now more difficult than they used to be, more academic in nature and, in some instances, less accessible to lower-ability learners. There are also those who point out that functional skills is more relevant in the context of preparing for technical and trade-related destinations and give students a better chance of reaching the required standard (Watkin 2016).

Table 4: Curriculum content for GCSE and Functional Skills

<table>
<tr>
<td>GCSE English Language
Explorations in creative reading and writing
Reading (literature fiction text)
Writing (descriptive or narrative writing)
Writers' viewpoints and perspectives
Reading (Modern non-fiction text and 19th century non-fiction text)
Writing (to present a viewpoint)
Non-examination assessment: spoken language
Presenting
Responding to questions and feedback
Use of standard English</td>
<td>GCSE Maths
Number
Structure and calculation
Fractions, decimals and percentages
Measures and accuracy
Algebra
Notation, vocabulary and manipulation
Graphs
Solving equations and inequalities
Sequences
Ratio, proportion and rates of change
Geometry and measures
Properties and constructions
Mensuration and calculation
Vectors
Probability and statistics</td>
</tr>
<tr>
<td>Functional Skills English[18]
Skills standards: Speaking, listening and communication; Reading and Writing.
Complex information and relevant, cogent response in appropriate language
Present information and ideas clearly and persuasively to others
Adapt contributions to suit audience, purpose and situation
Significant contributions to discussions, taking a range of roles and helping to move discussion forward
Different types of texts to obtain and utilise relevant information
Read and summarise, succinctly, information/ideas from different sources
Identify the purposes of texts and comment on how meaning is conveyed
Detect point of view, implicit meaning and/or bias
Analyse texts in relation to audience needs and consider suitable responses
Present information/ideas concisely, logically and persuasively
Present information on complex subjects clearly and concisely
Use a range of writing styles for different purposes
Use a range of sentence structures, including complex sentences and paragraphs to organise written communication effectively
Punctuate written text using commas, apostrophes and inverted commas
Ensure written work is fit for purpose and audience, with accurate spelling and grammar that support clear meaning in a range of text types</td>
<td>Functional Skills Maths[19]
Skill standards: Representing, Analysing and Interpreting
Positive and negative numbers of any size in practical contexts
Calculations with numbers of any size, to a given number of decimals, in practical contexts
Calculate ratio and proportion, problems involving scale
Equivalences between fractions, decimals and percentages
Simple formulae and equations involving one- or two- step operations
2D representations of 3D objects
Area, perimeter and volume of common shapes
Metric and imperial measures
Statistical measures, tables and diagrams, for discrete and continuous data
Statistical methods to investigate situations
Probability to assess the likelihood of an outcome.</td>
</tr>
<tr>
<td colspan="2">(based on findings from Adams et al. 2018; Department for Education 2013; Ofqual 2011a; Ofqual 2011b)</td>
</tr>
</table>

[18] For comparative purposes, functional skills Level 2 curriculum content summarised
[19] Ibid

Figure 2: Examples of GCSE and Functional skills English-based exam questions

0 5 You are going to enter a creative writing competition.

Your entry will be judged by a panel of people of your own age.

Either: Write a description suggested by this picture:

Or: Write the opening part of a story about a place that is severely affected by the weather.

(24 marks for content and organisation
16 marks for technical accuracy)
[40 marks]

^ GCSE English Language 8700 Specimen Paper – writing question and mark allocation (AQA 2018)

Activity 2: Write a letter of complaint to a travel company.
(Marks available: 20)

You and your friends went on holiday to a hotel in Paris, but you weren't happy with the accommodation. At the end of the holiday you filled in a customer feedback form (**document 2**). You are now going to write a formal letter of complaint to the Customer Services Manager asking for compensation.

Write accurately in sentences and paragraphs and pay attention to correct spelling, use of grammar and punctuation.

One document has been provided. The document contains useful content for the activity. You may choose to select and use any of the material for your writing.

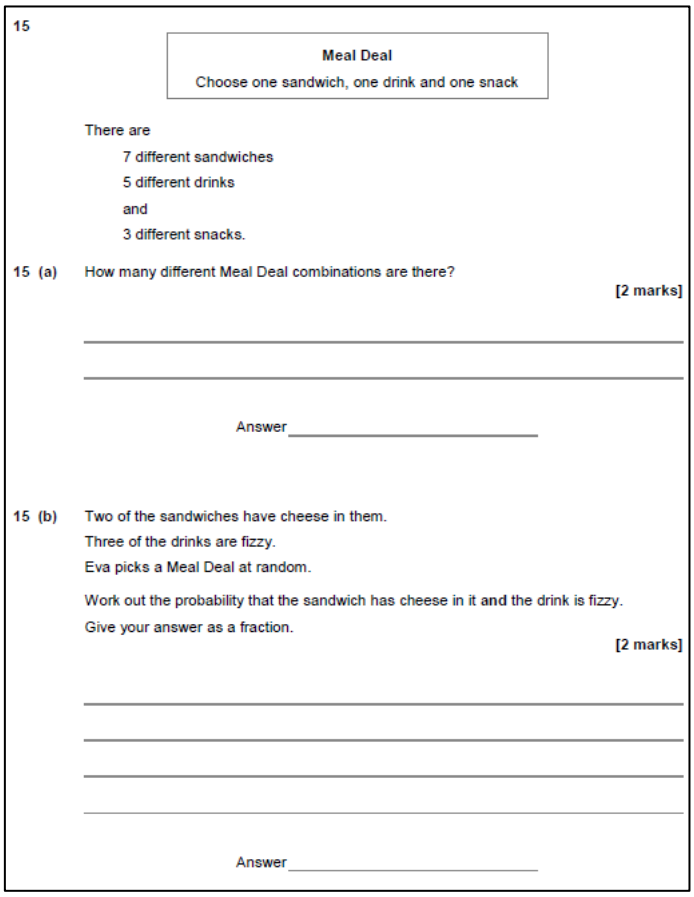
You may also use your own ideas to complete this activity.

Document 2

	Activity 2
• Present information/ideas concisely, logically, and persuasively. • Present information on complex subjects clearly and concisely.	5 marks
• Use an appropriate writing style fit for purpose. • Use a range of sentence structures, including complex sentences, and paragraphs to organise written communication effectively.	6 marks
• Punctuate written text using commas, apostrophes and inverted commas accurately. • Ensure written work is fit for purpose and audience, with accurate spelling and grammar that support clear meaning.	9 marks

^ Level 2 Functional Skills English – writing question and mark allocation (NCFE 2018)

Figure 3: Examples of GCSE and Functional skills maths-based exam questions



15

Meal Deal

Choose one sandwich, one drink and one snack

There are

7 different sandwiches

5 different drinks

and

3 different snacks.

15 (a) How many different Meal Deal combinations are there?

[2 marks]

Answer _____

15 (b) Two of the sandwiches have cheese in them.

Three of the drinks are fizzy.

Eva picks a Meal Deal at random.

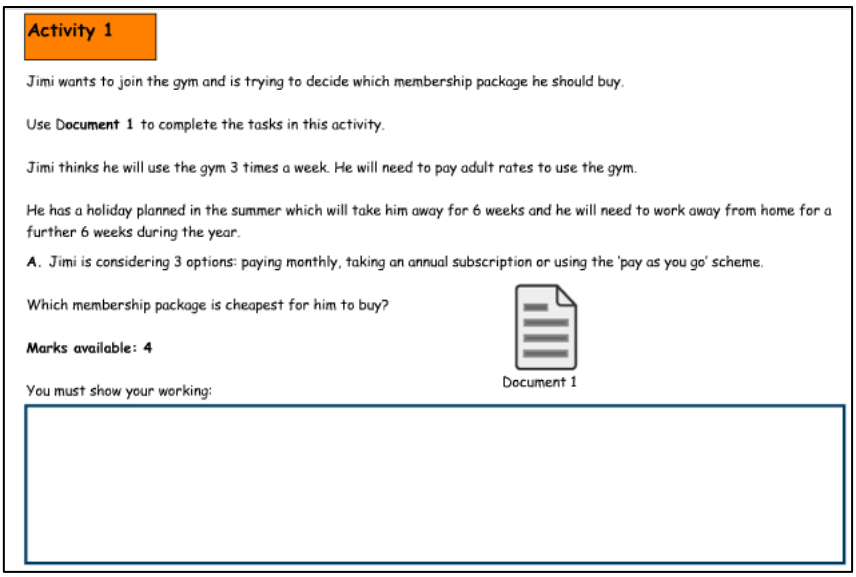
Work out the probability that the sandwich has cheese in it **and** the drink is fizzy.

Give your answer as a fraction.

[2 marks]

Answer _____

^ GCSE Mathematics 8300 Specimen Paper – problem solving question (AQA 2018)



Activity 1

Jimi wants to join the gym and is trying to decide which membership package he should buy.

Use **Document 1** to complete the tasks in this activity.

Jimi thinks he will use the gym 3 times a week. He will need to pay adult rates to use the gym.

He has a holiday planned in the summer which will take him away for 6 weeks and he will need to work away from home for a further 6 weeks during the year.

A. Jimi is considering 3 options: paying monthly, taking an annual subscription or using the 'pay as you go' scheme.

Which membership package is cheapest for him to buy?

Document 1

Marks available: 4

You must show your working:

^ Level 2 Functional Skills Maths – problem solving question (NCFE 2018)

After the withdrawal of key skills, as discussed in section 2.2.4, functional skills as an acting replacement were held in a similar regard and heavily criticised by Wolf (2011) as "entirely consistent with the commonly held view that key skills are in no real sense equivalent to the GCSE grades with which they enjoyed and enjoy formal equivalence". Whilst she did acknowledge that functional skills qualifications "may settle into being useful qualifications for some post-16 learners", she suggests to have any currency they should involve some form of external standardised assessment. Traditionally, functional skills were considered a 'stepping stone' qualification. In 2013 the government considered ruling out any funding for qualifications less than a GCSE for Maths and English. Subsequent pressures from AoC to introduce an interim qualification which would boost confidence and knowledge, and improve the chances of passing full GCSEs were reconsidered (Offord 2013b) and included functional skills at Level 2 and below (Gov.uk 2014). The government recognise the studying of Level 2 functional skills as equivalent to GCSE (Gov.uk 2018), and yet awarding bodies often identify a pass as comparable to 'half a GCSE at grade B' (Pearson 2018). Confusion and inconsistency still remain and has largely been left to the discretion of FE colleges, HE establishments and employers to decide on their own entry requirements (Morton 2014). Alternatively, The Education & Training Foundation (2015) have suggested that functional skills should be viewed as an alternative route in its own right.

First identified in section 2.3.2, the DfE commissioned research to document approaches and strategies to effectively plan and deliver post-16 mathematics and English provision. The key findings, in addition to recognising many demotivated learners studying any Maths and English, also found that diagnostics played a key role in both GCSE and functional skills delivery. Due to the disparity in learner's abilities, teachers were found using various classroom-based activities aimed at levelling mixed ability classes where possible, however often required personalisation and differentiation to meet specific gaps in an individual's knowledge. It was

also recognised that contextualised learning was important, and found "there remains a body of opinion that the functional skills qualification is a better qualification for contextualised learning than the GCSE as [it] has applied rather than theoretical content" (Higton et al. 2017, pp.9-10). Another thread running through much of teaching delivery observed, were recognising students spent many years at school without achieving the set grade during GCSEs. For most FE teachers, trying different methods were important to develop subject understanding and encompass different pathways to reach the same goal, structuring lessons differently to maintain engagement and embracing a different learning culture (Higton et al. 2017).

2.5 Chapter Summary

This chapter introduced the historical significance of government decisions and initiatives that led to the provisions of Maths and English in FE. Despite many government reforms basic education of literacy and numeracy were nationally weak in the UK, and strategies including the introduction of the National Curriculum and Ofsted were explored. This was followed by a review of funding that led to the change of focus and management in FE, shifting from GCSE qualifications to the growing rise of functional skills. In light of The Wolf Report, further review found much of the literature had concentrated on achievement rates and, despite expectations to show distance-travelled, lacked exploratory evidence and comparative results as a measure of student success. Furthermore, despite the rise in pupils with low literacy and numeracy skills before arriving to college, the review identified the pressure on SMTs to ensure student achievement in Maths and English in spite of funding restrictions and lack of qualified or experienced staff. Whilst the literature was steeped in criticism, it lacked the evidence of new or alternative strategies used by SMT to shape provisions for Maths and English. Finally the literature review explored and identified some of the challenges faced by practitioners such as student

disengagement, the use of embedding and dealing with absenteeism and poor attendance. The literature often discovered primary and secondary provision research, and lacked evidence directly relevant to FE that could take account of its inherent nature and notable differences. The challenge of how to manage student experience in relation to Maths and English was also discussed, and little evidence existed within FE in terms of good practice or advice, guidance and/or approaches for practitioners in their support of students. Naturally once informed, the need for improved practical recommendations relevant to Maths and English pertinent to government, SMT and practitioners in FE could be achieved.

Chapter 3: Methodology

3.1 Chapter Overview

This chapter explores a variety of research philosophies, methods, approaches and data collection tools in order to determine those most suitable for this thesis. The preceding literature review highlighted the lack of practitioner-based research within the field, and those necessary to build a more comprehensive understanding of the problem. As the use of action research forms the basis of this thesis, it was important to choose a research methodology that takes into consideration both the research objectives and case study environment in which the research is to be carried out and reasons for these decisions. The following chapter reviews existing literature of research and methodological approaches, before presenting the research design choices in each of the studies conducted as part of this thesis.

3.2 Philosophical Underpinnings

Research is a systematic and methodical process of inquiry and investigation that increases knowledge or solves a particular problem (Sekaran 1992). A variety of methodological approaches were explored, which provided an informative look at the different paradigms to base the research; i.e. perceptions, beliefs, assumptions and nature of reality and truth. Equally these parameters influenced the way in which the research was undertaken, from design through to conclusions. It was vital to ensure that approaches were congruent with the nature and aims of the research adopted in order to guarantee that researcher biases were understood, exposed and minimised (Gephart 1999; Steenhuis & Bruijn 2006; Flowers 2009). There are four distinctive research philosophies, i.e. positivism, interpretivism, critical theory and pragmatism, prominent in contemporary research today. Table 5 summarises the key differences between these research philosophies.

Table 5: Key differences between research paradigms: positivism, interpretivism, critical theory and pragmatism

	Positivism	Interpretivism	Critical Theory	Pragmatism
Goal	To have objective and generalised results.	To provide rich descriptions and/or make theoretical generalisations.	To confront injustices in societal structures and ideological patterns.	To address a significant problem within a naturalistic, real-world setting.
Key Theories	Contingency theory; Systems theory; Dustbowl empiricism.	Symbolic interaction; phenomenology; hermeneutics.	Critical theory; radical perspectives.	None.
Unit of Analysis	The variable.	Meaning, symbolic act.	Contradictions, incidents of exploitation.	The problem.
Researchers Role	Independent objective observer.	Actively involved in the data collection process.	Part of the world being studied and affects what is being researched.	Only focus on 'what' and 'how'.
Ontology	Naïve realism – "real" reality but apprehendable.	Relativism – local and specific constructed realities.	Historical realism – virtual reality shaped by social, political, cultural, etc; crystalized over time.	Any/optional.
Epistemology	Objective – researcher independent of reality.	Subjective – researcher and reality are one.	Neither objective nor subjective.	Any/optional.
Methodology	Experimental/manipulative; chiefly quantitative methods.	Hermeneutical/ dialectical; principally qualitative methods.	Dialogic/ dialectical.	Any/optional.
Data Collection Tools	Experiments; Surveys; Questionnaires.	Ethnography; biographical; interviews; case studies.	Ideology critique; action research.	Any/optional.
Types of Analysis	Secondary data analysis; Regressions; Likert scaling.	Conversational analysis; textual analysis.	Historical analysis; dialectical analysis.	Any/optional.

(based on findings from Fishman 1991; Guba & Lincoln 1994, p.109; Gephart 1999; Dash 2005; Steenhuls & Bruijn 2006; Ching 2008; ChangingMinds.org 2011; Clark [n.d])

Since theoretical questions in education emerge from different conceptions and interpretations of social reality, different paradigms have evolved to determine the criteria according to which one would select and define problems for inquiry. Although there are many important paradigmatic differences between these underlying approaches to research, there are some similarities, e.g. similar data collection methods and safe guards to reduce bias, which are often overlooked (Gephart 1999; Johnson & Ownuegbuzie 2004). The debate between these approaches, termed by Tashakkori & Teddlie (1998 & 2003) as "paradigm wars", has more recently seen a paradigm shift. Some researchers (e.g. Onwuegbuzie & Leech 2005; Morgan 2007; Goldkuhl 2011) have moved towards a mixed-methods approach, which founded the emergence of a relatively new set of beliefs – the pragmatism paradigm (Armitage 2007; Glogowska 2011). The latter paradigm, was identified and chosen to be the most appropriate for providing the philosophical underpinnings for this thesis.

3.2.1 Pragmatism

Pragmatism is not committed to any one system of philosophy and reality, and instead places value on the 'what' and 'how' of the research problem. Placing the research aims and objectives as central ensures the pragmatic researcher is in control to choose the most appropriate data collection tools and analysis methods that provide the greatest insight (Mackenzie & Knipe 2006). Alternative philosophical approaches were considered, e.g. positivism and interpretivism, however these were ultimately perceived restrictive in how the research problem could be viewed, e.g. either quantitatively or qualitatively. As discussed in preceding sections, it was decided that the research problem required a philosophical stance that considered both viewpoints together, which was only achievable using the pragmatic philosophy. Critical theory, although considered as an alternative, was not preferred as it appeared to distort the focus of the research, e.g. on wider social, cultural and political domination, and equally there was little confidence in achieving the underlying premise of emancipation (Myers 1997; Mack 2010).

The quintessential philosophical assumption of the pragmatic paradigm suggests that the choice should only be determined from the research problem; whereby, the choice of philosophy may vary depending on the research questions. Moreover, if the research question does not suggest unambiguously a philosophy to approach, then it confirms the pragmatist's view that it is perfectly possible to work with variations (Saunders, Thornhill & Lewis 2009, p.109). This continues to mirror the theme that mixed methods are possible, and perhaps highly appropriate, within one study (Saunders, Thornhill & Lewis 2009, p.109). It was thus more logical to choose multiple methods to meet the research needs, i.e. method triangulation, addressed in section 3.5.2.

With the pragmatic paradigm in mind, the research aims were placed at the centre of the decision making process, and, as prescribed, this gave the initial freedom to explore a number of varied research methods. This also allowed for a more natural pragmatic thinking approach, i.e. dynamic homeostatic process of belief, doubt, inquiry, modified belief, new doubt, new inquiry, etc., as part of an infinite loop. Even if the traditional questions of method were secondary to question of epistemology, ontology and axiology (Guba & Lincoln 1994) were accepted, it could be argued that the choice in one position is, in part, unrealistic in practice (Saunders, Thornhill & Lewis 2009, p.109). As supported by Tashakkori & Teddlie (1998, p.26) it was more appropriate to think of the philosophy adopted as a continuum rather than opposite positions. This process, in a way that suited and worked within the research environment, allowed for the continual building and improvement on past understandings (Johnson & Ownuegbuzie 2004).

Critics (e.g. Durkheim 1983; Trinder 1996; Shusterman 2002) on the other hand have argued that such a stance has led to an anti-intellectual trend in research and an "unashamedly empirical approach to research, steering a course between the scientific empiricism of the positivist project and the messier politicized approach to research of critical researchers" (Trinder 1996). It has also been attacked as "anything goes" (Macdonald 1996).

However, advocates for the pragmatic approach show that, as a consequence of the debate, it has helped to recognise the limitations of the methods associated with each paradigm and with the realisation that qualitative methods are acceptable and can be combined with quantitative methods to present a more comprehensive approximation of reality (Kazi 2000). As such, the pragmatic approach is "eclectic, not wedded to a single alliance" Cheetham et al. (1992) in Kazi (2000, p.755), and because of the diversity allows a new richness of data to be obtained through the use of both empirical and naturalistic approaches to draw more informed inferences.

In reprisal to critics, the pragmatic approach was chosen because (i) no other philosophical paradigm alone met the needs of the research aims and (ii) the researcher wanted to recognise the differences and limitations of other paradigms in order to develop a mixed-method approach to research that is complementary. Thus, whilst the philosophical values behind the overall thesis followed a pragmatic approach, there are elements of data collection tools and analysis methods used from other paradigms. A common feature and benefit of a mixed-method approach is the facilitation of data triangulation, see section 3.6.3 for applied data triangulation.

3.3 Research Approaches

There is a wide variety of research approaches in the literature that could be used to shape the research carried out for this thesis. The following list has been adapted from Punch (2005) and Kumar (2008):

- Applied versus fundamental
- Conceptual versus empirical
- Quantitative versus qualitative
- Experimental versus non-experimental

The focus of the rest of this section is on the choice of research approach in light of these distinctions, in order to build the research design.

3.3.1 Applied versus Fundamental

Research can either be applied (action) research or fundamental (basic or pure) research. Applied research aims at finding a solution for an immediate problem facing a society or an industrial business organisation, whereas fundamental research is largely concerned with generations and the formulation of theory. Applied research customarily uses individual cases to explore a research problem, which works collaboratively with all relevant research disciplines. Alternatively, pure research typically studies a research problem with the aim to generalise results within one disciplines stance or view point (Kumar 2008, p.7). The focus of this thesis is best understood as applied (action) research, with the aim of adopting research techniques from the teaching profession, education and social sciences, in order to embrace an inter-disciplinary approach to the research problem.

3.3.2 Conceptual versus Empirical

Conceptual research is that which is related to some abstract idea(s) or theory. It is generally used by researchers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observations alone to verify data and conclusions. It would be necessary when adopting the latter research approach to acquire facts first-hand, at their source, and actively go about doing certain things to stimulate the production of desired information (Kumar 2008, p.8). This thesis is in line with the conceptual research approach. As the research problem is such a new research area of interest, the lack of starting point or hypothesis required for empirical research is impractical. The need to gather data on the research problem in its natural and uninfluenced state is more sought after for the development of a conceptual understanding to the research problem.

3.3.3 Quantitative versus Qualitative

Quantitative research is routinely depicted as an approach to the natural sciences that uses experiments, survey and questionnaires as the preferred instruments for research. Qualitative research on the other hand is deemed

to be much more fluid and flexible with emphasis on discovering novel research, typically attributed to phenomenology and symbolic interactionism (Bryman 1984). Quantitative research has typically been more directed at theory verification, while qualitative research has typically focused on theory generation. Whilst this correlation between the two approaches is historically valid, there is no necessary connection between purpose and approach. That is, quantitative research can be used for theory generation (as well as for verification) and qualitative research can be used for theory verification (as well as for generation) (Punch 2005, p.16). A combination of both quantitative and qualitative research methods to support the triangulation of a mixed-method approach is fundamental to this thesis' research.

3.3.4 Experimental versus non-experimental research

Experimental research makes changes to independent variables and studies their effects on dependent variables under controlled conditions. Data generated in this way are typically used to establish cause and affect relationships between two variables. Non-experimental research on the other hand simply measures the present level of the independent variable. Data generated by this type of research can only be used to describe certain relationships without showing their functional interdependence (Kumar 2008, p.9). This thesis advertently adopts elements of both experimental and non-experimental research. As such a cross-sectional study design that collects data from a sample, at a specific point in time, in order to uncover relationships which exist (Kumar 2008, p. 10), is to be established.

3.3.5 Justification of Research Decisions

The researcher made the following decisions with regard to the research approach that has shaped subsequent choices to research methods (see section 3.4) and research design (see section 3.5).

Firstly, this thesis is best understood as applied (action) research, with the aim of adopting research techniques from the teaching profession, education and social sciences. In practice this makes the research more

scientific in nature, and proposes ideas and theories that can be supported by data. Another advantage of such an approach is that it addresses both the quality of students' education and the professional growth of teaching practitioners. Logically, this would be considered the ideal strategy in order for students to learn most effectively and for teachers to teach most effectively. Through reflection, it would be more intuitive to see what problems there are and some indication of how to go about solving the problem (Dyke [n.d]).

As the research problem is such a new research area of interest, the lack of starting point or hypothesis required for empirical research is impractical and a conceptual understanding of the research problem is sought after. To achieve this, a combination of both quantitative and qualitative research methods to support the triangulation of a mixed-method approach is fundamental to this thesis' research. This provides a more meaningful interpretation of the data, where each approach can mirror the other's findings and provide further insight into the research problem (Hughes 2016).

This thesis advertently adopts elements of both experimental and non-experimental research. As such a cross-sectional study design that collects data from a sample, at a specific point in time, in order to uncover relationships that exist (Kumar 2008, p. 10), is to be established. As this research contributes towards a master-level degree, a cross-sectional study is both timely and affordable to conduct. Future studies with additional funding would benefit from exploring opportunities using a longitudinal study with a wider population sample and multiple case study organisations.

3.4 Research Methods

This chapter has so far demonstrated that the chosen research methodology is pragmatic in nature, and in order to meet the needs of the thesis' aims had to be both applied and conceptual, utilising a triangulation

mixed-method approach and cross-sectional study. These combinations of decisions led to a number of relevant research methods to be considered that, to begin with, appeared to fit those needs. These choices, including their advantages and disadvantages, are summarised in Table 6.

Table 6: Advantages and disadvantages of research methods considered

Research Method	Advantages	Disadvantages
Grounded Theory	• Emergence of conceptual categories and theories • Openness between researcher and participants • Study of micro issue in larger reality	• Bottom-up research • High level of experience and acumen of researcher • Requires theoretical sensitivity
Ethnography	• Focus on culture in social groups • Optional roles of researcher • Narrative used to 'tell a story'	• Lack of control, as 'invited guest' • Time consuming and expensive • Irreproducible
Case Studies	• Intensive analysis of a small number of subjects • Useful for early stage research • Adds strength to previous research • Only one investigator necessary to perform data collection and analysis	• Narrow field of interest • Limited grounds for establishing reliability and generality • Aptly described as 'mere' case study
Action Research	• Actionable solution to the research problem • No constraints to gathering data or analysis performed • Researcher plays active role to bring about change	• Concerns with regard to rigour and investigator training • Loss of true 'outsider' viewpoint • Potential bias of conclusions

(based on findings from Orum, Feagin & Sjoberg 1991, p.2; Soy 2006; Denscombe 2007; Gerring 2007, p.6; Gray et al. 2007; Thorpe & Holt 2007; Belouin 2010; Connaway & Powell 2010)

A variety of methods were initially explored and subsequently discarded. The decision was made not to use grounded theory, as the process to generate theory from minimal priori constructs, appeared to stand in direct contrast to the need for planning and organising of the research design (Leonard & McAdam 2001). The need for preparation was vital to ensure relevance to the research area and interests. That is, the research problem

followed a more traditional model whereby a theoretical framework would need to be developed and then applied (McCallin 2003; Laws & McLeod 2004). Ethnography was also considered, and whilst it was found beneficial for 'telling a story' and discovering categories and questions that were most relevant, the involved commitment to 'being there' to conduct research appeared to impede the natural state of the phenomenon being studied and research interests of participants (Van Maanen 1996; Genzuk 1999; LeCompte & Schensul 1999, p.2-5; Belouin 2010). Case studies and action research on the other hand were both identified as suitable research methods for this thesis.

3.4.1 Case Studies

Case study research consists of a detailed investigation of the phenomenon within its natural environment, often based on a single case (e.g. person, community, social group or organisation) over a period of time (Seale & Barnard 1998, p.21). The aim is to provide an analysis of the situation and processes which illuminate the theoretical issues being studied and understand how these are influenced by context (Cassell & Symon 2004, p.323). It is more commonly used when: (i) large variety of factors and relationships are included; (ii) no basic laws exist to determine which factors and relationships are important; and (iii) factors and relationships can be directly observed (Connaway & Powell 2010, p.80). Case studies were chosen for these reasons, in addition to finding it an appropriate research strategy to explore the research aims (Darke, Shanks & Broadbent 1998). As supported by Thorpe & Holt (2007, p.38), case studies are especially effective in approaching that which is little understood; such as when the research problem is ambiguous, fuzzy, or even chaotic; and thus complex and difficult to overview and predict.

Critics of this research method (Seale & Barnard 1998, p.21; Soy 2006; Gerring 2007, p.6), however, argue that the study of one case can offer no grounds for establishing reliability or generality of findings. Indeed, the results from one study are too narrow and alone cannot be extrapolated to

fit an entire question or be illustrative of an entire population. Therefore, the use of several data collection tools, addressed in section 3.5.2, to understand the research from multiple sources, provided a much broader and deeper insight to the research problem. Similarly, generalisation with the use of case studies becomes possible when they are replicable in research or study design (Seale & Barnard 1998, p.21; Soy 2006). Furthermore, it also provided an opportunity to challenge assumptions and existing knowledge taken for granted in the literature (Seale & Barnard 1998, p.21; Soy 2006). The choice and rationale of rigorous and validated data collection tools were favoured to reduce bias, interpretation and collection of findings between studies. Likewise, action research was identified to complement the use of case studies.

3.4.2 Action Research

Action research, also known as participatory research, collaborative enquiry and action learning, provides an informed investigation into a real issue within an organisation. In its simplest form it involves action, evaluation and critical reflection. It does not specify constraints by which data should be gathered and indeed seems to borrow a pragmatic approach that allows a wide variety of different data and analyses tools to be performed (Balafas 2009, p.60). Utilising such a method allowed new knowledge to be achieved in order to discover relevant benefits the organisation, which in turn inform the research community (Thorpe & Holt 2007, p.17).

In essence it is 'learning by doing' – whereby the researcher identifies a problem, does something to resolve it, reflects on how successful their efforts were, and if not satisfied, tries again (O'Brien 1998). As described by Stringer (1999), action research is rigorous empirical and reflective research resulting in some practical outcome to the organisation and relevant stakeholders. It was vital therefore to ensure the research problem was studied systematically and strategies were always collaboratively informed by theoretical considerations and learning (O'Brien 1998). This action approach to research places primary emphasis on the applied and

actionable solution of the research problem in practice. To its advantage, the result of such a research process is more likely to be put to use (Gray et al. 2007, p.366). However it should be noted that action research is not simply a method or a procedure for research but a series of commitments to observe, through practice, principles for conducting social enquiry (Smith 2007).

Action research distinguishes itself from other methods in that the researcher plays an active role with members to bring about change, however small, in the operations of that organisation (Thorpe & Holt, 2007 p.17). In the past, organisations involved with action research have widely appreciated the practical and tailored value of such an approach. However it has suffered a decline in favour since the 1960's because of its association with radical political activism (Gray et al. 2007, p.366; Smith 2007). It was recognised that there were, and to a degree still are, questions concerning its rigour and training of those undertaking it (Smith 2007). Equally, even when action research is well executed and successful, from the viewpoint of those participating, it is still open to the critique that its conclusions are biased because "the researcher's ideas have become so commingled with those of the participants that an objective viewpoint is impossible" (Gray et al. 2007, p.366).

However, it was believed, as Bogdan & Biklen (1992) identify, research is a frame of mind and once satisfied that the collection of information is systematic, and that any interpretations made have a proper regard for satisfying truth claims, then much of the criticisms aimed at action research are withdrawn (Smith 2007). In any case, the choice of validated data collection tools was favoured to minimise possible associated investigator influences. Advocates of action research assert that any unintended loss of the true "outsider" viewpoint is more than compensated for by the participants' sense of self-reflection and their respect for the measures of their own performance (Gray et al. 2007, p.366).

3.5 Research Design

The choice of case studies and action research methods were two-fold. The first was identified to provide a framework for presenting results on the FE case study organisation, on which the research for this thesis would be based. The latter, which placed emphasis on providing an actionable solution, was then used to underpin the entire thesis' research process and author's logic to achieve the research objectives. Consequently, and for these reasons, case studies and action research were chosen to complement one another in order to achieve the research aims of this thesis. The steps by which these research methods were applied and used as part of this thesis are outlined in the remaining sections of this chapter.

3.5.1 Action Research and Role of Insider-Researcher

The history of term 'action research' is usually traced back to the work of the social psychologist Kurt Lewin. Lewin portrayed action research as involving a spiral process, in which a solution to a problem is formulated and tried out, its level of success monitored, the proposed solution reformulated in light of this, new strategy tried out, and so on. It promises closer approximation to an ideal solution in the pursuit of practical improvement combined with theoretical understanding (Hammersley 2002). There are four basic themes of action research, i.e. empowerment of participants, collaboration through participation, acquisition of knowledge and social change. The process that the researcher goes through to achieve these themes consist of planning, acting, observing and reflecting (Zuber-Skerrit 1992). This research identifies the problem and a specific intervention, and subsequently agrees to facilitate with its implementation and review (Holter & Schwartz-Barcott 1993; Masters 1995). In this instance, the project was subsequently guided by informed strategies from SMT, in the promotion of more efficient and effective practice alongside the personal participation of teaching practitioners within the case study organisation and collaborative practitioners.

A criticism to using such an approach often stems from the influences and bias associated with power. In action research it is the 'idea' which is the source of power for action and since the 'idea' often resides with the facilitator, it is the facilitator who fundamentally controls power in the project (Grundy 1982; Masters 1995). As action research is based on producing practical knowledge that is useful, simple methodological niceties would limit any, if not all, contributions to the field if such an issue were further debated (Reason & Bradbury 2000). In order to maintain transparency of power, Zeni's (1998) six-part review were carried out at the start of the research to identify potential ethical problems and relevant actions by the researcher. A detailed review can be found in Appendix 2, with key areas summarised in Table 7. Furthermore, the issue of separating the researcher from what is being researched is arguably impossible. As a result, it was acknowledged that, even though absolute truth cannot be established, there are knowledge claims that are still valid in that they can be logically inferred (Vine 2009).

Table 7: Summary of relevant responses to 'Guide to Ethical Issues and Action Research Questions for review and reflection'
Part I: Overview (see Chapter 1 of this theses)
The time frame of the project is two-years. There will be no pilot study and project will aim to investigate the role of cross-curricular embedding of functional skills Maths and English in FE.
Part II: Methods and setting (see Chapter 3 of this thesis)
The data collected is planned to come from information stored on current college systems or staff intranet. Questionnaires to be sent to all teaching staff within the FE college. Interviews to be carried out with both SMT and teaching practitioners (those who do and do not directly teach functional skills).
Part III: 'Subjects' and subjectivity (see Chapter 4 of this thesis)
The staff involved in this research vary from ages 18 to 70. There are shared understandings between SMT and this research project. Permission was sought to carry out the study and there is professional commitment to complete the study in respect of college values. No conversations as to the direction of the study have occurred, and the research aims and objectives were solely designed and created by the researcher. The level of inquiry as part of this research will not include any direct data collection and/or observation of young people or those with less power.
Part IV: Risks and benefits
To ensure identifiable personal information is reduced, personal data is anonymised and generalised. However, removing this information can minimise the impact of research and limit the level of scrutiny the data can be inspected. Similarly, by providing such anonymity, recognition for 'good practice' as relevant to this research can neither be rewarded nor acknowledged. The reason to maintain anonymity has been sacrificed to ensure the data collected has more chances of being accurate, as participants may feel they can share more honest opinions, and scope. As this research project fits with the overall college's strategies for the next academic year regarding functional skills, staff and SMT are keen to use findings as a result of the study. Evidence would be served to track student success, show staff good practice and the value in such an approach to form part of the college's quality improvement.
Part V: Ethical questions specific to 'insider' research
Members of SMT at the FE case study college have read the research proposal, as part of the process in supporting its application and authorising absence for residential events. Staff and students at the FE college case study have not been informed or notified of the project prior to data collection, to avoid collusion and/or influence of participants. Selected data will be included or discarded based on its relevance to the research aims and objectives. When presenting data, the final thesis will include areas relevant to different stakeholders such as government, SMT and teaching practitioners. Audience interpretations of the findings may vary and cause differing opinions and inferences, or be scrutinised because of decisions and/or views on the author and their role within the organisation. Whilst these can be acknowledged and considered, political implications may or may not arise as a result of this research.
Part VI: The Golden Rule
If successful, this research would ultimately lead to the qualification of Masters in Philosophy. As a teaching practitioner and academic this fits my own values to maintain my skills set in academic research alongside my current job role, and priorities to enhance my own curriculum vitae and continued professional development.
(adapted from Zeni 1998 and BERA 2011)

3.5.2 Data Collection Tools

As discussed in the proceeding sections, the philosophical pragmatism approach places the research problem as central where data collection tools and analysis methods, are those most likely to provide insights into the phenomena (Mackenzie & Knipe 2006). The combined choice of case studies and action research placed no constraints by which data could be gathered, nor did it specify the type of analysis to be performed. Action research permits a wide variety of reactive and non-reactive data collection tools and techniques. Taking this one step further, opportunities for the use of quadrangulation allows for the 'triangulating' research methods, theories, perspectives and the use of accumulated case data gathered in the research setting. This approach has re-emerged at a time of great upheaval and concern for professional development in classrooms and schools, allowing for detailed description, interpretive asides and evaluative accounts of action in education (McKernan 1991, pp.56-58).

Method triangulation, or mixed methods, advocated previously by other researchers (e.g. Gable 1994; Thurmond 2001; Johnson, Onwuegbuzie & Turner 2007), is broadly defined by Denzin (1978, p.291) as "the combination of methodologies in the study of the same phenomenon". This choice in strategy has long improved researcher accuracy and judgement, where findings can be corroborated and any weaknesses in the data can be compensated for by the strengths of other data; thus increasing validity and reliability of the results. The decision was made to conduct what is often referred to as the "between (or across) method" technique; the most popular of triangulation procedures, as a vehicle for cross validation when two or more distinct methods are found to be congruent and yield comparative data (Jick 1979, p.602).

In light of these choices, the following data collection tools were chosen: secondary data collection, interviews, questionnaires, observation and focus group. A more thorough explanation of rationale and study design are discussed in the subsequent sections of this chapter.

3.6 FE Case Study Design (Part I and Part II)

Part I study was used to compare data against previous academic years to measure success of ME strategy. Subsequently, *Part II* was to determine how cross-curricular embedding of maths and English as part of the ME strategy had been achieved. The FE case study organisation, identified in Chapter 1, were the basis of this research.

The following sections summarise the methodological choices in study design and data analyses. It is important to note that the focus of the study was limited to the FE case study organisation, without exploring in detail other similar organisations. It was acknowledged that due to the research design and nature of this study, despite all efforts made, the decision to compare results with others and the reality of natural chaotic factors, as previously mentioned in section 1.6, are considered in light of the research design and results presented throughout this thesis.

3.6.1 Data Collection and Participant Selection

For *Part I,* formal documentation was obtained from the FE case study college for the academic years 2015-16, 2016-17 and 2017-18. Documents were relating to qualification examination results and student attendance records. These files were downloaded automatically from MIS and/or systems managed by the college. The first phase examined the raw data and were used to create case profiles. These documents went on to inform the questionnaire design and interview schedule, and provide some background knowledge so that the researcher was not 'going in cold'.

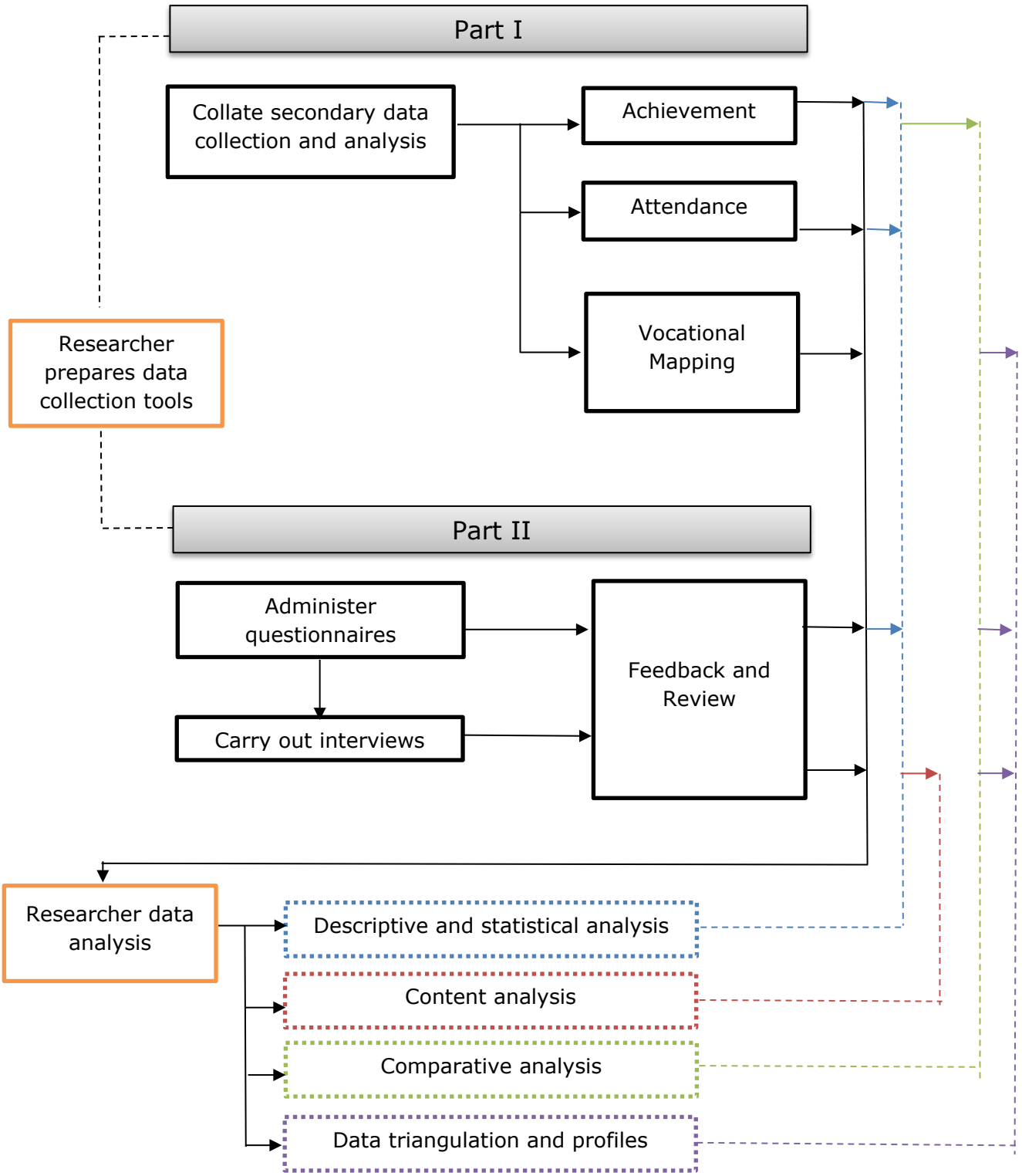
For *Part II,* the FE case study college were asked to send copies of the vocational mapping plans carried out by SMT and teaching practitioners within each department. In addition, documents related to any corporate audits, learning walks and student-voice meetings were collected. These documents were to inform the questionnaire design, i.e. to give context to responses for comparison, and inform the first round interview schedule. Questionnaire and interviews provided data through the generation of responses and transcripts.

For both *Part I* and *Part II* of the study, members of SMT were recruited following an in-house email advertisement and questionnaires sent via email to all employees, including practitioners and support staff to provide scope on the relevant issues. A total of four members of staff were interviewed and thirty responded to the questionnaire. The common factors between participants were that they were all employed by the FE case study college, were involved with teaching and delivery and were willing to take part in this research.

3.6.2 Gathering of Data and Justification of Study Design

In accordance with rules and regulations of new research conducted at University of Sunderland, an ethical clearance was received between data collection had begun and participant consent forms designed (endorsement and consent form in Appendix 3). The research design was two-fold, *Part I and Part II,* and utilised data collection tools including secondary data analysis, interviews and questionnaires. The study design are illustrated in Figure 4, including data analysis techniques.

Figure 4: FE Case Study Design Part I and Part II



Secondary data analysis

Secondary data analysis involves the analysis of an existing dataset, which had previously been collected by another researcher or purpose. Secondary data is widely used by researchers, and has many advantages including: savings in relation to resource, time and money; increased data quality in terms of collection and reliability; larger sample size as datasets will often use a larger sample than those that can be obtained by undertaking primary data collection; and, as Hinde (1991) notes, can build on previous work to create new knowledge (Devine (2003) in Miller & Brewer 2003). There are however a number of practical and ethical considerations that were considered and the author's responses summarised in Table 8.

Table 8: Summary of responses relevant to using secondary data

Compatibility of the data with secondary analysis: are the data amenable to secondary analysis?
Researcher response: There is a distinct 'fit' between the purpose of this thesis and the nature and quality of the original data. The secondary data collected form part of the same evidence presented for auditing and SMT review at the end of each academic year. The same data would be used and presented to both internal and external stakeholders of the FE case study, and after release would become available for public knowledge.
Position of the secondary analyst: Was the analyst part of the original research team?
Researcher response: The researcher has access to the original data, however did not form part of the research team. Much of the secondary data collected were recorded by multiple members of the FE case study and the data, due to its inherent nature, is assumed to be of high quality as part of the recording process. Agreements to access and use the data involved was agreed.
Reporting of original and secondary data analysis: Such is the complexity of secondary analysis, is the study design, methods and issues fully reported?
Researcher response: An outline of the study design, methods and issues are summarised within this thesis on the reporting of the secondary data collected.
Ethical issues: How was consent obtained in the original study?
Researcher response: Learning agreements and data collection consents completed by the FE case study provide the required informed consent to use and re-use data, on conditions that data is anonymised and generalised. This is consistent with professional guidelines on ethical practice and ethical clearance received as carried out for this thesis.
(based on questions adapted from Heaton (1998) in Miller & Brewer 2003)

It has been suggested that secondary data analysis is a more convenient approach, however where the researcher was not part of the original team the approach is best only employed by experienced researchers because of the difficulties of doing secondary analysis in an independent capacity. Nevertheless, a more coherent response would be to argue that the design, conduct and analysis of both qualitative and quantitative research are always contingent upon the contextualisation and interpretation, thus secondary analysis is no more problematic than other forms of empirical inquiry all of which depend on the researcher's ability to form critical insights based on inter-subjective understanding. Likewise, secondary data does not preclude the possibility of collecting primary data. It was therefore considered appropriate for the researcher to obtain additional primary data through interviews and questionnaires to enhance findings and conclusions made for results (Heaton 1998; Miller & Brewer 2003).

Questionnaires

Following the practice of previous researchers, the use of questionnaires were reasoned as a practical and low cost approach to obtain relevant, and more candid if anonymous, data from participants that is quickly and easily quantified (Evidence Base 2006; Cohen, Manion & Morrison 2007; Gray et al. 2007). Although interviews were considered as an alternative, they would have been time consuming to complete on such a large scale and overall reliability was deemed limited in comparison to questionnaires comprehensiveness in light of the research needs (Cohen, Manion & Morrison 2007, p.352). Despite their popular use, questionnaires' general limitations when used in research were considered. As a result, anonymous online self-completed questionnaires were used to encourage replies and minimise researcher bias. In addition, the use of questioning techniques to develop critical thinking (see Paul 1993), was preferred to increase reliability and validity. However, the main concern of using questionnaires is that in most cases they often only capture a snap shot of a situation, event or stressor, at a single point in time (Gray et al. 2007). Therefore

methodological triangulation, to gather different perspectives, i.e. secondary data collection, gives strength to the choice of data collection.

The ME questionnaire, presented in Appendix 5, was an adapted version of a national survey for teachers by Wehmeyer et al. (2000). The areas of enquiry included professional opinions of embedding strategies, perceptions of learners and recommendations to improve Maths and English. As a starting point the questions were re-formatted into a mix of open and closed ended questions. These were then edited, removed and added to any relevant questions to support the areas appropriate to the research objective. The ten-item questionnaire, designed to be complete within fifteen minutes, was then used as the basic premise for exploring participants' opinions of functional skills at the FE case study college. The results of the closed questions were then quantitatively analysed and summarised, and for open ended questions qualitatively transcribed.

Interviews

Interviews are often used in research to explore the views, experiences, beliefs and/or motivations of individuals on specific matters. Researchers often have found they provide a 'deeper' understanding of social phenomena than would be obtained from purely quantitative methods. There are three fundamental types of research interviews: structured, semi-structured and unstructured. Semi-structured interviews were adopted for this research as they concurrently help to define the areas to be explored as part of the research question and allow the researcher flexibility to pursue an idea or response in more detail (Gill et al. 2008).

Gillham (2000) sets out criteria for when interviews should be used for data collection, which were met by this research. Firstly, small numbers were involved, between 3 and 6 participants in each case, and these individuals were all key respondents to the aim of this research. The questions set out in the interview schedule, as shown in Appendix 4, and were mainly open questions requiring a level of detail and explanation that could not have been achieved through a questionnaire. In addition, the use of questioning

techniques to develop critical thinking (see Paul 1993), was preferred to increase reliability and validity. The interview schedule was used to guide the semi-structured interviews, and to make data collection more systematic and ensure the same areas were covered with each participant.

Questions of functional skills were featured strongly, and intended to provide both background and comparison from current academic year (2016/17) to previous academic year(s). Interviews, though planned to take twenty minutes, lasted between seven and thirty minutes. To minimise bias, the researcher was careful not to digress into wider conversations about the FE case study college and to remain objective, whilst still establishing a friendly rapport. Finally, the interviews were qualitatively transcribed

3.6.3 Data Analysis

The research involved a number of data collection tools and subsequently different data analysis techniques, as summarised in the following sections.

Descriptive and statistical analysis

Descriptive analysis was chosen to generalise quantitative secondary data in *Parts I*, *and* participants' responses to the questionnaire for results in *Part II*. Data were initially coded using Microsoft Excel and statistical analysis was then performed to make generalities from findings. It is important to note that intentions to conduct more complex statistical procedures, e.g. t-tests, chi-squared, existed but were not achievable. Following recommendations from Howitt & Cramer (2001, p.161) any cell found to fall lower than five had been shown to produce inaccurate results. Alternative investigators (e.g. Deacon [n.d.]), whom are considered to be more generous, suggest one-fifth of values should be no lower than five. Consequently the collective data failed to meet either of the above numerical requirements. Therefore descriptive statistical analysis such as percentages and frequency distributions, were used to illustrate findings. Results are presented in Chapter 4 of this thesis.

Content analysis

Content analysis is considered a widely used qualitative research technique. Rather than being a single method, current applications of content analysis show three distinct approaches: conventional, directed or summative. Nevertheless, all three approaches are used to interpret meaning from the content of text data (Hseih & Shannon 2005). As a result, a directed approach was adopted to derive findings from summative content analysis for comparison and interpretation of secondary data and questionnaire text-based responses in *Part I,* and interviews in *Part II.*

Comparative analysis

Comparative analysis, to explain how something is like or unlike something else (Withen 2002), was carried out as part of data analyses for quantitative secondary data results of *Part I*. Specifically it was used to compare examination results between academic years. Initially trends were visually examined. These results were illustrated in tabular form through recommended MIS software and, where relevant, raw data were coded and inputted using Microsoft Excel and mean values evaluated. Reported findings are presented in the results, see Chapter 4, of this thesis.

Data triangulation and profiles

Results of *Part I* and *Part II* study design, alongside the researcher's own observations, were transcribed to create a single sub-case study in one subject area to bring together a variety of data sources, i.e. data triangulation. Findings could thus be corroborated and any weakness in the data compensated for by the strengths of other data, thereby increasing validity and reliability and reducing the risk of false interpretations (Colwell & Richardson; UNAIDS 2010). The case profiles have subsequently been anonymised and generalised. Summary of this profile are presented in the results, see Chapter 4, of this thesis.

3.6.4 Collection and Reporting of Data

The data collection period for the FE case study began in April 2018 and ended in September of the same year. The timeline for data collection was

extended to ensure academic year-end results were more accurate, as oppose to mid-way through, when responses to questions were unknown or less informed. As a result, whilst presented sequentially, the data collection was not carried chronologically as illustrated in Figure 4. In addition, the FE college case study during this time were observed as part of a full Ofsted Inspection. The researcher also relocated to another FE college to take on a new job role. Due to a good working relationship with the case study college the researcher's access to the initial setting, data set and participant group continued to be available.

3.7 Chapter Summary

This chapter has presented a review of choices for following an appropriate research methodology, and those chosen as part of this thesis. The research approach was considered: (i) applied, embracing an inter-disciplinary and collaborative research style; (ii) conceptual, in view of a natural understanding to the research; (iii) combination of quantitative and qualitative to support the triangulation of methods; and (iv) experimental and non-experimental, to uncover relationships among variables from multiple perspectives. The research philosophy thus followed a pragmatic approach, which placed the research problem as central and valued the differences between paradigms, unlike others, to promote a mixed-method approach to research. The decision to pair both case studies and action research methods ensured a framework for presenting results and an actionable solution was achieved. A variety of data collection tools were also presented. Finally, the research design for studies were summarised and lessons learned, based on both researcher and participant feedback were acknowledged. A summary of data gathered is shown in Table 9.

Table 9: Summary of data gathered
Participants
16 Vocational Tutor 6 Functional Skills Tutor 5 Dual (vocational and functional skills) Tutor 5 ALS/ILS Support 2 Member of Senior Management Team
Number of Questionnaire Responses
30 Questionnaire responses
Number of Interviews Carried Out
4 Interviews carried out

Chapter 4: Data Analysis and Findings

4.1 Introduction

The literature review, as summarised in Chapter 2, revealed the need for further evidence and comparative results as a means of measuring student success in Maths and English to help evaluate new strategies and/or initiatives. The use of an ME strategy chosen by the case study college, outlined in Chapter 1, provides much needed evidence for sharing good practice to shape Maths and English provision, and exploring wider policy implications and improvements most relevant to research and practitioners in the education profession. Existing research concentrated on primary and secondary school(s) (Roby 2004; Gottfried 2009), and lacked evidence directly relevant to further education that could take account its inherent nature and notable differences. At the time of this study, more young people were not achieving good qualifications in Maths and English, with the least progress made within FE colleges.

This chapter, using the research design outlined in Chapter 3, presents the results of the ME strategy within the FE college case study. As discussed in Chapter 1 of this thesis, SMT within the FE case study college developed an ME strategy to improve achievement in functional skills and to bring consistency in approaches cross-college for both students and staff. This approach made particular focus on embedding functional skills within vocational subject areas of interest, with the expectation that students would take an approved qualification at a level beyond that already achieved. The college made the decision to remove the delivery and qualification of Level 2 functional skills for academic year 2017/18, focusing efforts on achieving Entry 3/Level 1 functional skills or GCSE[20]. To achieve this, the ME strategy for academic year 2017/18 set to improve the planning, delivery and review of functional skills Maths and English.

[20] Students with a grade D or equivalent at GCSE were enrolled on GCSE resit sessions.

4.2 Participant Demographics

Thirty-four staff members from the FE case study college volunteered in the study and a range of ages, gender, job roles and departments were targeted to provide scope on the relevant issues. This research conforms to the process of 'blanket anonymisation' of all participants, including background data. Whilst the researcher considered the implications for providing deeper understanding of empirical data and archiving, the primary concern was to disguise and remove sensitive information from the rest of the network. The information revealed in a network may be particularly sensitive for those individuals included, and who could quite feasibly recognise themselves within it. Importantly, data that might not be seen as 'sensitive data' (such as a series of relationships between people) by one group of individuals (say teaching practitioners) at one particular time, might be considered particularly sensitive by other people, or at a future point in time (Clark 2006). Given the number of participants involved with the study, the re-identification was considered too high for reporting. Participant information presented in this chapter were analysed at group level in order to de-identify participants where appropriate.

4.3 Reporting of Results

The reported results of the study are in line with the FE case study design, illustrated in Figure 4 and take into consideration each phase of the study design, as presented in Chapter 3. It is worth noting that secondary data collection and analysis were initially carried out, *Part I*. In the next phase, participants were administered with questionnaires and interviews, *Part II*. Outcomes as a result of these data collection tools, including relevant results and findings are discussed sequentially[21] in more detail. In addition, this section highlights a single sub-case study that draws from the research to investigate one area of interest in the FE case study college. This was

[21] Results are presented sequentially, not in chronological order of data collection.

designed to aluminate quantitative and qualitative aspects of the ME strategy and the impact of this in practice with a group of learners.

4.4 Results of Part I

This section reports the generalised findings from *Part I* of the research design and explores the achievement, attendance and implementation of the ME strategy used by the FE case study college. Results from secondary data collection and analysis, were combined and summarised.

4.4.1 Achievement

Table 10 summarises the college's achievement and success for academic years 2015/16, 2016/17 and 2017/18 against national averages for main study programmes, GCSE Maths and English, and Functional Skills. In the majority of instances, the FE college had improved overall success rates year-on-year and were above national average. More specifically, success in overall functional skills Maths and English for those aged 16-19 and GCSE English have shown the greatest improvements. Whilst overall achievement has remained consistent in GCSE maths, it is important to note that the college made the decision to remove the delivery and qualification of Level 2 functional skills for academic year 2017/18, focusing efforts on achieving Entry 3/Level 1 functional skills or GCSE[22]. Achievements were in line with predictions for the majority of qualification types other than functional skills. Level 1 functional skills in both Maths and English is the most significant volume of provision below national averages and in both cases achievement rates are considered inadequate.

[22] Students with a grade D or equivalent at GCSE were enrolled on GCSE resit sessions.

Evidence at this stage could support initial recommendations from the Wolf (2011, p.83) that raising aspirations by encouraging learners to achieve qualifications "that might stretch (and reward)" has shown an increase, as oppose to the widely expected decrease, in overall achievement. Although figures are limiting, without comparative results to establish if learners would or could have achieved Level 2 functional skills in the same year if given the opportunity.

Table 10: Achievement and Success Percentage for 2016-2018

	2015/16	2016/17	2017/18*	National Average**
Main study programme excluding E&M	85%	84%	88% ↑↑	87%
GCSE Maths and English				
16-18	--	73%	82% ↑↑	81%
19+	--	70%	76% ↑↓	80%
GCSE English				
16-18	5%	14%	30% ↑↑	27%
GCSE Maths				
16-18	10%	19%	19% ↑↑	16%
Functional Skills English				
16-18	34%	54%	55% ↑↑	54%
Of which Entry	76%	79%	84% ↑↑	80%
Of which Level 1	29%	50%	37% ↓↓	60%
Of which Level 2	11%	31%	--	--
Functional Skills Maths				
16-18	40%	55%	56% ↑↓	58%
Of which Entry	88%	87%	85% ↓↑	85%
Of which Level 1	23%	30%	32% ↑↓	46%
Of which Level 2	12%	33%	--	--

*Note: ↑↓ First arrow indicates higher or lower than previous academic year. Second arrow indicates higher or lower than national average.
**National average based on overall % for 2017/18

4.4.2 Attendance

Attendance records as shown in Table 11 over the same period show GCSE Maths and English attendance, 70% and 69% respectively, was significantly lower than equivalents in functional skills at 79% respectively.

Table 11: Attendance for 2017-2018

	Actual	Authorised
GCSE English	65.83	70.21
GCSE Maths	64.54	69.02
Functional Skills English	72.71	79.25
Functional Skills Maths	74.05	79.46

Note: Colours represent below, near and above expected target as set by FE college case study for academic year 2017/18

Whilst existing literature supports the notion that cultivating more positive student attitudes in order to improve students' motivation and attendance is key to achievement (Higton et al. 2017), attendance records has raised inconsistencies. Whilst success at GCSE was more significant from previous years, attendance was ultimately below expected targets and yet, above expected attendance targets despite a decline in functional skills achievement. These results are inconsistent with expected assumptions that attendance is directly linked to achievement, although could point towards the additional impact of main study vocational teaching delivery that support and enhance learner's maths and English skills outside of those specific scheduled lessons. Alternatively, students may have been choosing to attend lessons where they feel more confident and avoiding others that were more challenging. An explanation cannot be drawn from this data alone and requires further investigation in future.

4.4.3 Vocational Mapping

The process of vocational mapping was initiated during the planning phase between end of academic year 2015/16 and the start of 2016/17 for all subject areas and teaching staff members within the FE college. Teaching practitioners, led by SMT, were asked to embed cross-curricular themes into vocational study programme schemes of work, regardless of level and/or those completing functional skills. A total of seventy-seven documents were prepared by staff within the FE college.

From the four subject areas of interest[23] within the FE college, three areas including Arts & Health, Science & Technology and Work Based completed the written mapping process and presented their work to SMT before the start of the academic year, an example snapshot of vocational mapping report shown in Figure 5. All areas followed the prescribed curriculum themes and topics for maths and English each week, with little or no variation recorded (see Appendix 1 for themes).

Figure 5: Snapshot of functional skills vocational mapping report for Level 1 English (Science & Technology)

Week	Theme	Vocational Delivery Plan	Complete
1	Nouns, adjectives, plurals, alphabetical ordering.	L3 – Unit 1/42/18 (week 2) - SELF EDIT TASK: Identify nouns, adjectives, plurals and alphabetic ordering from one of the websites you used for research. L1 Unit 23 - SELF EDIT TASK: Identify nouns, adjectives, plurals and alphabetic ordering in your presentation. L2 Unit 6 - SELF EDIT TASK: Identify nouns, adjectives, plurals and alphabetic ordering from one of the websites you used for research. L2 Unit 1 – Ordering task. Students will need to place the online services in correct alphabetical order and maintain correct ordering within their presentations L2 Unit 1 – Identifying stakeholders. Students will need to identify stakeholders involved with online advertisements	Y

[23] The college provides courses in 15[23] subject areas, which were subsequently categorised into four areas of interest by the researcher including: **Adult & Core** (A Levels/GCSE, Access, Adult and Community Learning, Entry and Additional Learning Support, ESOL and HE); **Arts & Health** (Arts and Media, Early Years and Health & Social Care, Sports and Public Services); **Science & Technology** (Science, Business and ICT, Construction and Engineering); and, **Work Based** (Beauty, Catering and Hospitality, Land Based, Work Based Learning).

The level of detail added to planning documents varied significantly between the areas of interest. Those with comments amounting to 20 words or less, an example snapshot of vocational mapping report shown in Figure 6, were most frequent. In some instances, the repetition of planned activities were common place within the same vocational mapping reports, example snapshot shown in Figure 7 - highlighted areas of repeated links to vocational contexts. This raises some critical inquiries regarding the tenuous relationship practitioners may have between planning in theory and delivering in practice. This is explored further later in this chapter, see section 4.7.2.

Figure 6: Snapshot of functional skills vocational mapping report for Level 1 Maths (Work Based)

Week	Theme	Vocational Delivery Plan
Week 1	Whole numbers and negative numbers. Add, subtract, multiply and divide. Add and subtract decimals up to 2 decimal places.	**Level 2:** Unit 202 – Feeding and Watering – rationing **Level 3:** Unit 304 – Animal Feeding – rationing Unit 312 – Fitness – Calculating averages

Overall, whilst largely followed by those teaching within the FE college, the vocational mapping process was inconsistent in output. Where some teaching practitioners within areas added significant detail, others were brief and inexplicit in terms of forward planning activities. The FE college case study were un-prescriptive as to the expected level of detail within these documents, nevertheless the inconsistency between them would have very likely led to a significant difference between learner's experiences. Achievement and attendance could have largely depended on their chosen vocational specialism and the effort teaching practitioners working within that area placed on following the ME strategy. This data

indicates the quality of the embedded delivery in vocational areas may well have varied between vocations in the FE case study college.

Figure 7: Snapshot of functional skills vocational mapping report for Level 1 Maths and English (Arts & Health)

[redacted]	Theme	Maths	English
1	Nouns Adjectives plurals		Research projects – preparation for assessment. Work packs – written tasks ALL UNITS
1	Whole numbers, negative number adding subtracting	Colour theory – determining various schemes using definition and calculating colour combinations. Makeup case studies: preparing job briefs. ALL practical UNITS	
2	Verbs and tenses		Research projects – preparation for assessment. Work packs – written tasks ALL UNITS
2	Ratio's	Product use	
3	Proof reading misspelt words		Work packs – written tasks corrections. CV / statement / Job application case study task ALL UNITS
3	Simple Formulae		
4	Adverbs and adjectives		Research projects – preparation for assessment. Work packs – written tasks ALL UNITS

4.5 Results of Part II

This section reports generalised findings from Part II of the research design and explores practitioner's viewpoint of maths and English in relation to teaching practice, learner behaviours, ME strategy and good practice. In addition, interviews were carried out to probe and gather more detail on embedding and staff member's understanding of college expectations. Results from questionnaires and interviews were separated by areas of enquiry and summarised.

4.5.1 Engaging and Inspiring Learners in Practice

Participants were asked what tools, techniques and/or strategies they had used to promote functional skills in their teaching for academic year 2017/18. This gained further insight into how teaching practitioners were interacting with learners to engage and inspire them. The most common responses are shown in Figure 8.

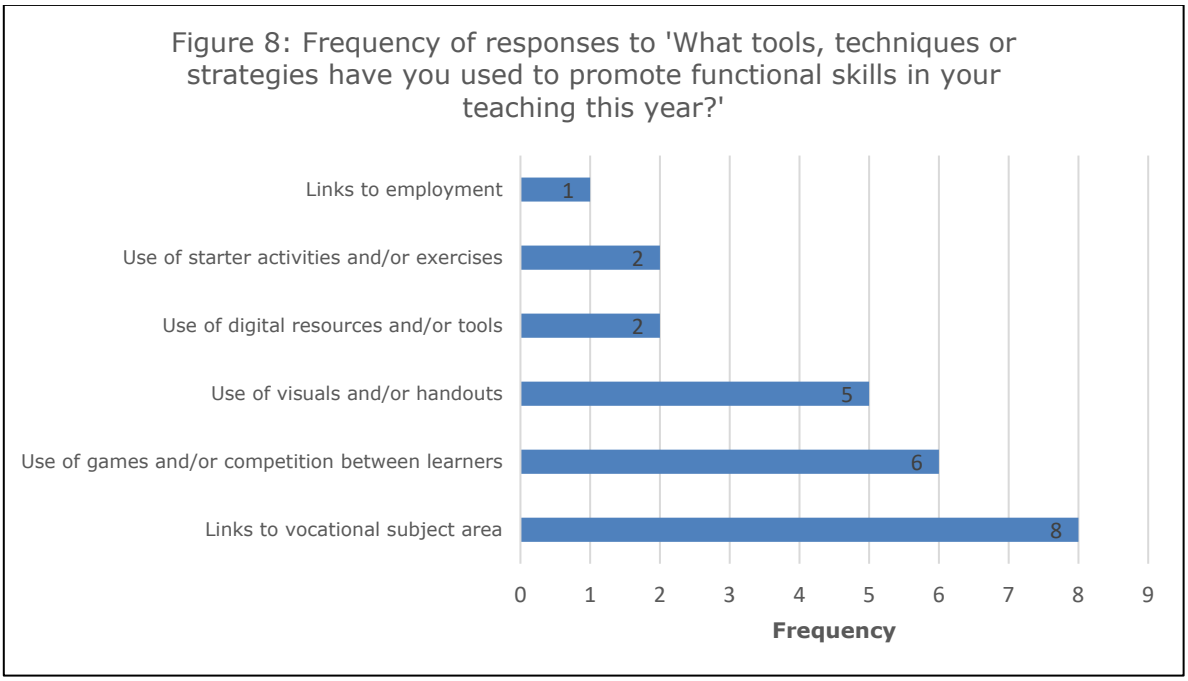


Figure 8: Frequency of responses to 'What tools, techniques or strategies have you used to promote functional skills in your teaching this year?'

Responses found teaching practitioners were more likely to link functional skills to vocational subject areas and often considered this 'embedding'. One vocational tutor during interview commented that "*… some of the good practice I do see with the teaching of Maths and English is, obviously we as a department have, what's called keywords and we try to embed that in with spelling, punctuation and obviously relating keywords to [subject area]".* As reported by Casey et al. (2006) successful embedding is not just a question of putting structural features in place, but also of teamwork and shared understandings and beliefs. Whilst this was accepted in English, the same participant recognised that "*in regards to maths it's a bit of a divide within the department, I would say. You have certain [subject area]*

aspects that don't really deal with maths at all and we have lecturers that aren't very good at maths… but if push comes to shove they could certainly teach parts of it… they just lack the confidence".

As has been noted before, over ambition in setting goals by policy makers instead of practitioners, obscures the size of the challenge for those who must make things happen on the frontline. As a result there were a growing number of FE colleges in the UK who utilised vocational tutors for the delivery of functional skills maths and English, despite of or before any training were complete. The FE case study college would have some areas where teaching practitioners taught both vocational and functional skills topics, i.e. dual tutor. One dual tutor during interview acknowledged this was largely beneficial to learners "*I think the students sort of enjoyed that because they knew you for [subject area], they knew you for functional skills, they know your teaching styles and they know what you're like*". This is explored throughout this chapter and examined in more detail, see section 4.7.2.

4.5.2 Impact of Teaching Functional Skills on Practitioners

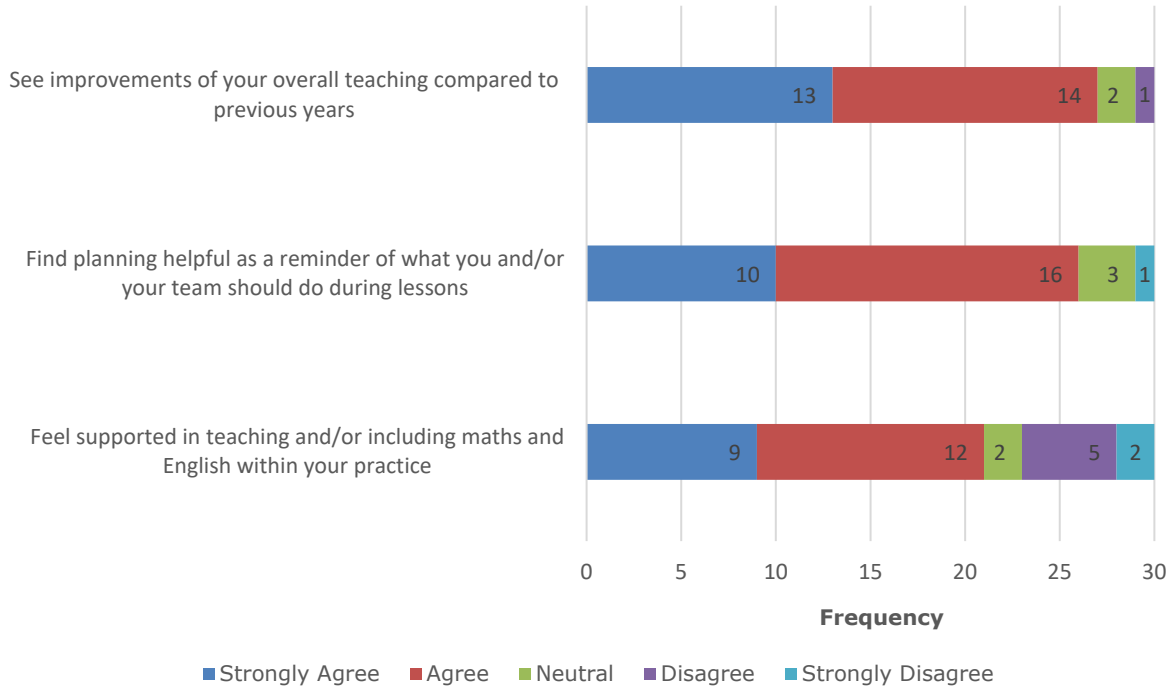
The same dual tutor also suggested "*I think that having the option to choose if you want to teach functional skills is a big, big benefit… If you're forced to it you're not as motivated, you're not as engaged… I'm not engaged, I'm not focused on doing this… this is just an add on job*". It appears that the impact on some dual-tutors is largely dependent on their role and acceptance of carrying out those activities. As previously acknowledged in the literature, research by Casey et al. (2006, pp.11-14) found that learners were twice as likely to fail when practitioners were asked to take dual responsibility for teaching vocational and LLN, or were solely taught by non-specialist LLN practitioners.

A more experienced teaching practitioner also commented on the need for more training, "*I feel that we don't embed functional skills into lessons very much at all really."* A decline in prior achievement, pre-entering FE, is often overlooked and yet has little impact on the basis of which government

standards and expectations have been based. This was supported further with the comment that "*we don't take into account the learners previous learning and past experience… so the lessons are just run as a generic activity rather than developing individual weaknesses really*." This breakdown could be due to a lack of teacher skills and/or ability to differentiate in the classroom.

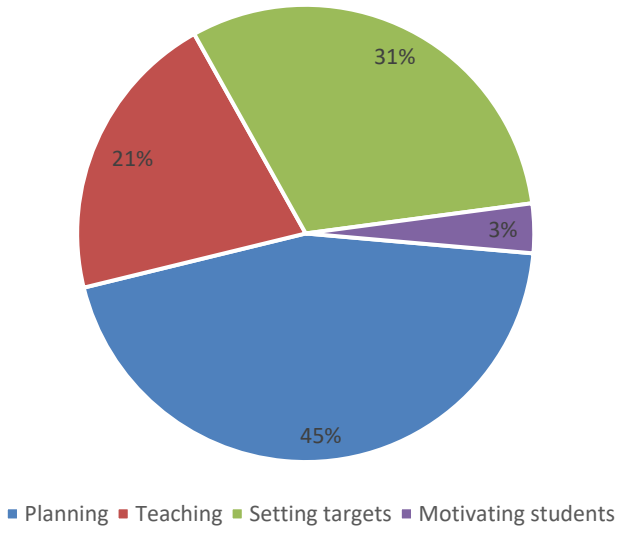
In contrast, questionnaire participants were also asked to value their opinions for their support with teaching, planning and observed improvements with a Likert-type scale. This was used to measure the degree to which participants appraised their views on college support, individual planning and general improvement from previous academic year, and to give an indication of their satisfaction within the college. The distribution of responses are shown in Figure 9. In all instances, the majority of participants responded positively that they agreed or strongly agreed that they saw improvements to their teaching compared to previous years, found planning to be a useful tool in lessons and felt supported in teaching maths and English.

Figure 9: Distribution of responses to 'With regards to functional skills maths and/or English, do you..'



Furthermore, from the twenty-nine responses, participants were more likely to consider maths and English when planning and setting learner targets, with fewer participants considering this when teaching and motivating students, as shown in Figure 10. These results continue to support the role of planning (see McCarthy & Bagaeen 2014) as a popular tool for teaching practitioners to support maths and English.

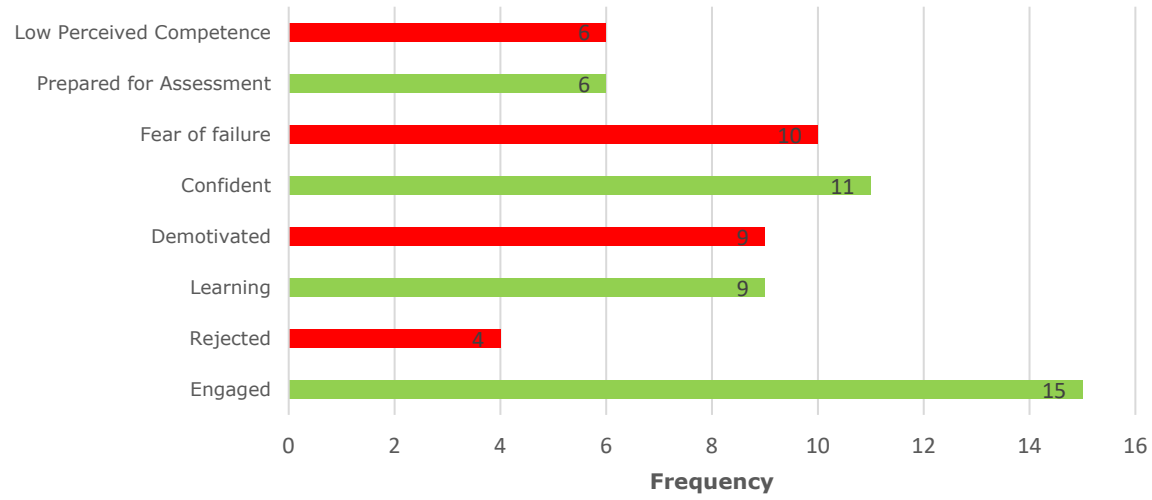
Figure 10: Distribution of responses to 'During which activity are you most likely to consider maths and English?'



4.5.3 Learner Perceptions and Expectations

Participants were asked to describe learner's perceptions of maths and English at the end of the year. The distribution of positive and negative perceptions is shown in Figure 11. On the one hand, results are consistent with existing literature carried out by Liem et al. (2008) and Martin et al. (2012) that found learners often presented latent disengagement predictors such as fear of failure and demotivation in their relationship with maths and English. However, this study also found teaching practitioners were more likely to recognise learners having positive traits such as confidence and engagement at the end of the year. It is highly likely that observations significantly differed across the FE college, which may have been a result of the teacher's own awareness or that the ME strategy led to mixed responses. In either case, it is clear that teaching practitioners at the college were able, and more open, to comment on the positive attitudes of their learners after using the ME strategy than complaints and/or grievances.

Figure 11: Frequency of responses to 'Which of the following generally describes your learner's perceptions of maths and English by the end of the year?'

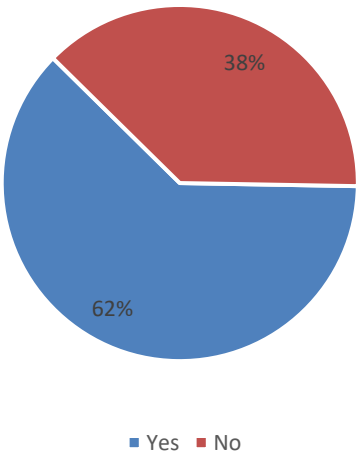


Participants were asked to rank skills they felt students needed when directing their own learning for maths and English. Results revealed that teaching practitioners valued self-monitoring (i.e. measure, record and evaluate own behaviour) and self-evaluation (i.e. reviewing own work and learning to identify skills gap) as the most important skills for learners. In contrast, antecedent cue regulation (i.e. using own cue or prompt to act as signal for desired behaviour) and self-reinforcement (i.e. self-administer a reward after success) were considered least important skills. These results act as evidence that despite significant cuts to the number of teaching hours allocated to deliver functional skills in FE (Wolf 2011, pp.158-159), practitioners expectations of their learners evaluating their own performance was of more importance, than learners rewarding themselves on their own achievement. The literature supports this notion as extrinsic motivated learners (those who complete an activity because it leads to the receipt of an external reward) are likely to learn less, have more errors and are likely to return lower achievement scores (Baranek 1996).

4.5.4 Understanding and Interpreting College Expectations

Based on twenty-nine participants who responded, the distribution of those familiar with the activity and/or practice of embedding functional skills or as part of vocational skills mapping are shown in Figure 12. These results are in line with expectations and reported findings in *Part I*, whereby three areas of interest completed vocational mapping and one area did not.

Figure 12: Distribution of responses to 'Are you familiar with [vocational skills mapping] activity and/or practice?'

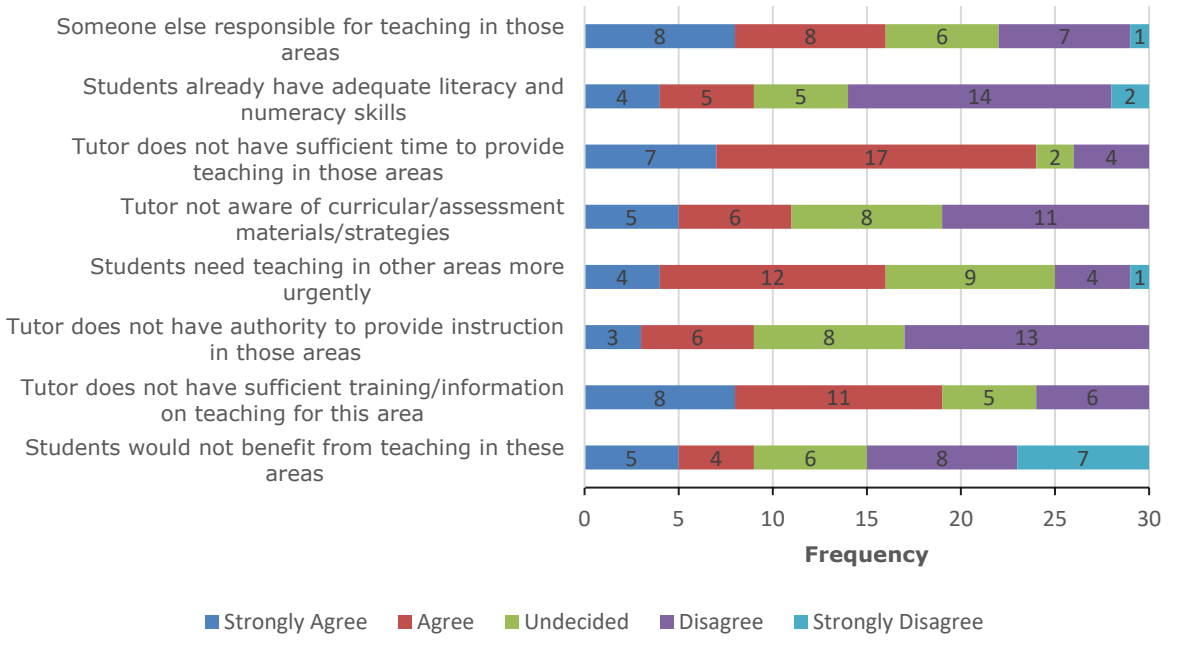


Despite the ME strategy adopting a college-wide approach, there were clearly areas within the college that were neither aware or followed the recommended strategy. Further investigation of the FE case study college is explored later in this chapter, see section 4.7.2. Furthermore, as presented in Figure 13, participants were asked to value a number of statements to determine barriers that prevent the use of vocational skills mapping and/or inclusion of functional skills in main study programmes.

The majority of participants agreed that barriers to mapping and inclusion more often included lack of tutor time and insufficient training/information. One participant during interview speculated some changes were needed moving forward, such as: "*I think in some areas in the college our weakness is that lecturers who are unfamiliar with the structure or are not out and out maths or English teachers struggle to teach it*". This supports the evidence found by previous research (see Greatbatch & Tate 2018) that 60% of practitioners reported spending no time at all on Maths and English. Nevertheless, there are those who have seen success within their areas and plan to continue using the same ME strategy: "*I would think we would*

probably carry on the same, we were quite successful with regards to our Maths and English results and within our own departments".

Figure 13: Distribution of responses to 'Do you consider these barriers that prevent the use of vocational skills mapping and/or inclusion of functional skills in main study programmes?'



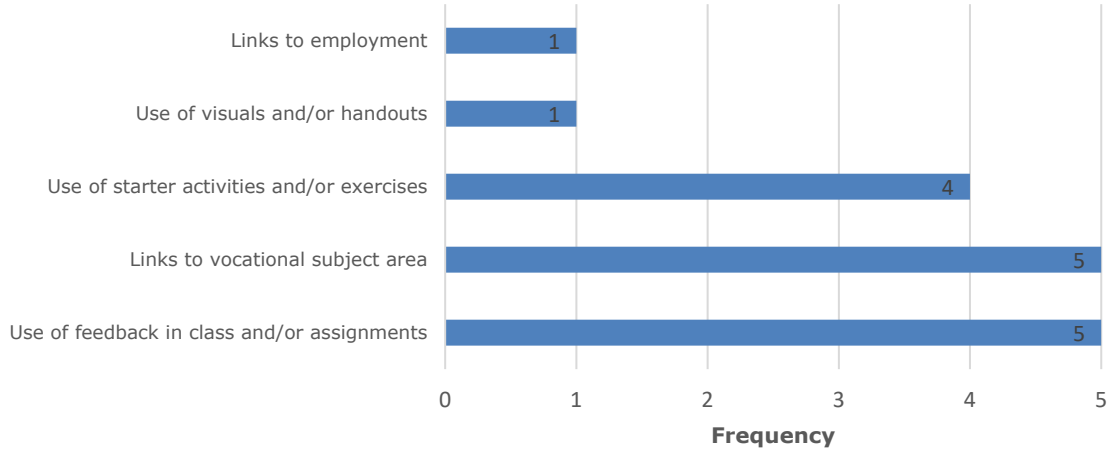
Questionnaire responses also identified that practitioners felt a sense of pressure on their time, where students urgently required teaching in other areas. Whilst the literature review identified reduced guided learning hours for Maths and English (Wolf 2011), the same funding cuts have impacted vocational qualifications (Education & Skills Funding Agency 2017). One dual tutor during interview commented on a recent example with students who were not motivated to complete ME based tasks because they preferred to complete their main vocational study programme instead: "*So they would say Sir 'why are we doing English in an [subject] class, it doesn't make sense, I can tell we're doing an English activity we're not doing [subject] stuff' and because the class I'm teaching are focused towards assignments they wouldn't really get involved in the English task… tasks weren't really completed as well as they should have*".

The ME strategy promoted a unified approach to functional skills in vocational teaching and delivery at the FE college. All those interviewed used the term embedding, and recognised some of the challenges in achieving this. On this occasion recognising the importance of differentiation. One of the participants commented that "*embedding of Maths and English should be ongoing… [and] developed in every lesson but it should be developed on an individual basis not generically across the class. So someone that had an issue with punctuation, that would be their target for the lesson and the tutor should work with the student to develop that student's skills in that area so that development is very important*". Similarly, another highlighted: "*some opportunities in lessons it was quite natural, you could embed the Maths and English in there but some of them you couldn't and it was really forced*". The participant's use of language and the term 'forced' in this context has been explored later in this chapter, see section 4.7.2.

4.5.5 Recognising and Sharing of Good Practice

Based on sixteen participants who responded a variety of good practice strategies were recognised and shared, as summarised in Figure 14.

Figure 14: Frequency of responses to 'Share one way you have seen a peer or colleague in your organisation include maths and English that you would consider good practice'



Many of the responses mirrored good practice provision as recommended by McCarthy & Bagaeen (2014) including assessment feedback, enhancing

employability/providing linkage with practice and use of specialisms. Whilst individually participants identified these areas, on further probing during interview, one of the participants identified the lack of collaboration among practitioners and recognised the value of other countries that are leading the way who do not share a unified approach, i.e. "*You've got countries like China and Singapore… we're still trying to compare them to ourselves… we've got no systems in place like they do… they've got a creative sort of mechanism for teaching functional skills... we're trying but legislations aren't being very handy*".

Finally, Table 12 presents responses from fourteen participants who provided recommendations for the FE college to improve maths and English based on their experience this year.

Table 12: Recommendations to improve maths and English

Category	Comments	Frequency
More college support and/or training	• More support for teachers • More time and support of methods and strategies • Provide SOW with resources • More lesson observations	7
Dedicated specialist teaching team for maths and English	• Need a dedicated functional skills teams not using departments • Have specialist Maths and English tutors for functional skills • Get in qualified people… as they know what they are doing	5
Less embedding of maths and English	• … embedding Maths and English at EVERY opportunity may simply be a way of turning them off their fresh chance and demotivating them further	1
Communication between vocational areas	• … I believe they communicate well between departments to get the best for the students	1

Whilst previous research (see Fielding et al. 2005) suggests the lack of sharing good practice often stems from low confidence between teaching practitioners, participants during interview in this study commented that: "*current lecturers haven't had any real training*" and "*people will embed Maths and English only if they think they're getting a walk through or*

they're under observation". There have been a number of subsidised enhancement programmes in Maths and English to help FE lecturers teach the growing number of students preparing for resits and functional skills (Offord 2013a), and yet lack of training was often identified within the FE college and supports existing literature that there is a current shortage (Greatbatch & Tate 2018).

The literature review identified the growing number of FE colleges who utilised vocational tutors for the delivery of functional skills maths and English, despite of or before any training were complete (Offord 2013a). Based on questionnaire results and interview comments, evidence would indicate that college support and training was equally identified as an area for improvement moving forward from the ME strategy. Similar to findings from Casey et al. (2006) the attitudes towards practitioners taking dual responsibility for teaching vocational and functional skills was in most instances adversely challenged.

4.6 Data Triangulation

To provide a comprehensive insight of a single group's results and impact of the ME strategy, an in-depth analysis using data triangulation, i.e. bringing together a variety of data sources to profile the group, was carried out. This ensured the researcher's own notes were synthesised together with data collected during Phase I and Phase II. A single learner group in Science & Technology studying Functional Skills English were examined, and learner profiles summarised.

4.6.1 Group Vocational Mapping, Content and Use

Vocational mapping was carried out by all members of staff from the Science & Technology vocational teaching team during summer planning, across two team meetings of 1.5 hours each. In collaboration, vocational and functional skills tutors came together to place differentiated, tailored and specific tasks relevant to learners in that group, i.e. in line with the subject teaching that week, English-based activities were aligned to each

group based on relevance. Therefore, whilst the core theme for the week was achieved for all students, there was enough variation to match a particular learner's in class activities. An example snapshot shown in Figure 15 highlights the different activities based on vocational delivery. Staff members considered this at the time to be "*a tedious task*", however they also suggested it was "*much easier because we used our schemes of work*".

Figure 15: Snapshot of functional skills vocational mapping report for Level 1 English (Science & Technology)

4	Adverbs and adjectives	L3 Unit 1 - FS English Activity - exercise on adverbs and adjectives – making reports more interesting and creating persuasive text L2 Unit 1 – Making text more interesting activities and creating persuasive advertisements. L1 Unit 12 (week 3)– Making text more interesting and creating persuasive pieces of text	Y
5	Skimming and scanning	L3 Unit 1 – Skimming and scanning. Students to Skim and scan podcast help sheet to find specific information L2 Unit 1- Students will complete skimming and scanning worksheets in order to gain the skills needed to create their own web pages. http://www.bbc.co.uk/skillswise/topic/skimming-and-scanning/resources/l1 Level 1 Unit 12 – Skimming and scanning. Students to Skim and scan podcast help sheet to find specific information	Y

On reflection, they found the vocational mapping process to be a much more useful way to track the development of English activities, and commented that it gave them "*ample opportunity to explore more interesting tasks and activities…* [and] *students found it more engaging that wouldn't have been half as good if I thought it up the night before*". In terms of ease of use and application, staff found it held them more accountable to actually follow their planning as if they didn't it would have been "*more awkward*" to deliver in another week or they would have had to think of a different activity to replace it. One of the vocational tutors mentioned that it reduced flexibility as after a short leave of absence this led to greater difficulty in moving or swapping sessions on his/her scheme of work, although the "*cover tutor loved it*".

4.6.2 Group Background

A group of fifteen vocational science and technology based learners studied functional skills English at Entry 3/Level 1 alongside their main study programmes. Table 13 shows the breakdown of qualification by level[24] studied for main vocational area and functional skills. This indicates that the majority of learners were studying their vocational area at a higher qualification than the level studied for English. It is also worth acknowledging that learners studying at Level 3 for their main study programme had all in the previous academic year studied GCSE (attaining a grade E or below) or failed to achieve a pass at the same level in functional skills. Of these learners, five also had a history of studying English as a second language (ESOL).

Table 13: Qualification breakdown summary for Science & Technology profile

Learner #	Main Vocational Study	Functional Skills Study	Previously Studied ESOL
1	Level 2	Level 1	
2	Level 2	Level 1	X
3	Level 3	Level 1	
4	Level 2	Entry 3	X
5	Level 3	Level 1	
6	Level 2	Level 1	
7	Level 2	Level 1	
8	Level 2	Level 1	X
9	Level 2	Level 1	
10	Level 3	Entry 3	X
11	Level 2	Level 1	
12	Level 3	Entry 3	X
13	Level 2	Level 1	
14	Level 1	Entry 3	
15	Level 2	Level 1	

4.6.3 Teaching Delivery

The group were taught by two dual-tutors (practitioners with experience of delivering vocational and functional skills teaching). Both practitioners

[24] Entry Level qualification is available at three levels – Entry level 3 is the most difficult. Level 1 qualifications are equivalent to GCSE grades D, E, F, G or 3 - 1. Level 2 qualifications are equivalent to GCSE grades A*, A, B, C or 9 – 4. Level 3 qualifications are equivalent to A/AS level or level 3 Diploma.

attended all relevant college training, took part in staff survey's, were observed as part of the annual corporate audit and consistently rated 'good' or 'outstanding' by senior advanced practitioners and/or members of SMT. It was suggested by one of the dual tutors that "*I think it's a lot more helpful because you get a richer delivery from having two teachers because one teacher can jump in and say 'listen this is how we learn about this, this is another technique of doing this'".* For each session, one tutor would take the lead and the other was available for support with activities or one-to-one teaching.

Delivery sessions for the group varied from traditional taught, revision preparation and mock exams. Identified as an example of good practice during Corporate Audit 2017/18 reports, tutors prepared their own version of Functional Skills placements (see Appendix 6 – Example of Functional Skills Placemat). Each week a placemat was designed to include relevant activities for each theme, in line with the vocational skills mapping exercise. Observations from SMT of teaching delivery during this period were positive, as were student feedback. One of the dual tutors commented: "*they [learners] really enjoyed the placements because they knew what they were doing, when they going to do it. They had the resources available for them so they could do it at home and they could do them in their own free time as well as in lesson. They liked the flow of the lesson so starting on activity one moving down the worksheet all the way to the end*". In all instances, both tutors reported following the ME strategy as prescribed by the FE college.

4.6.4 Group Achievement

Overall achievement for the group were below both college and national average expectations at 47%. A more detailed breakdown of results are shown in Table 14. To achieve a pass grade, each learner must have achieved a pass in all reading, writing and speaking & listening assessments. Based on the data compiled, three learners failed to attempt one area of assessment despite passing two assessments. In all instances,

learners' attendance had deteriorated towards the end of the academic year and subsequently did not attend scheduled assessments and were unable to achieve an overall pass grade. It was anticipated by their tutors that these learners would have achieved a pass grade if they attended scheduled assessments.

On further review, as a group, learners appeared more confident with their reading and speaking and listening skills with overall achievement on these assessments at 87%. The majority of learners were found to fail their writing assessment, with only 60% of learners achieving a pass. For those learners who attempted speaking and listening, students had achieved a pass on the first occasion. Over half the learners had to resit an assessment more than once, with the majority of learners resitting the reading assessment and subsequently passing in comparison to writing. It is worth noting that learners for this qualification are able to resit assessments as many times as required with no penalty or punitive marking.

Table 14: Achievement breakdown summary including (number of assessment attempts)

Learner #	Attendance Risk Register	Reading	Writing	Speaking	Overall
1	Risk – 100%	FAIL (x3)	FAIL (x3)	PASS (x1)	FAIL
2		PASS (x4)	FAIL (x3)	PASS (x1)	FAIL
3	Risk – 60%	PASS (x2)	PASS (x1)	FAIL (N.S*)	FAIL
4	Risk – 57%	PASS (x2)	PASS (x1)	PASS (x1)	PASS
5	Risk – 92%	PASS (x1)	FAIL (x3)	PASS (x1)	FAIL
6		PASS (x1)	PASS (x1)	PASS (x1)	PASS
7		PASS (x1)	PASS (x1)	PASS (x1)	PASS
8		PASS (x2)	FAIL (x4)	PASS (x1)	FAIL
9		FAIL (x4)	FAIL (x3)	PASS (x1)	FAIL
10		PASS (x1)	PASS (x1)	PASS (x1)	PASS
11	Risk – 71%	PASS (x1)	PASS (x1)	PASS (x1)	PASS
12		PASS (x1)	PASS (x1)	PASS (x1)	PASS
13		PASS (x1)	PASS (x1)	PASS (x1)	PASS
14	Risk – 71%	PASS (x1)	PASS (x1)	FAIL (N.S*)	FAIL
15	Risk – 50%	PASS (x2)	FAIL (N.S*)	PASS (x1)	FAIL
Total Achievement %		**13/15 - 87%**	**9/15 - 60%**	**13/15 - 87%**	**7/15 - 47%**

*N.S [No Show]

Note: Colours represent fail, fail (due to N.S) and pass

4.6.5 Group Attendance

Overall attendance for the group at the end of the year was generally good at 87%. Seven learners throughout the year were highlighted on the automatic risk register report[25] – titled 'ME Attendance Below 70%'. The FE college case study procedures are to identify learners at risk and carry out 1:1 reviews and, if required, disciplinary stages to support learners and improve attendance. As a result, of the seven learners identified at risk, two learners attendance improved to 92% and above, whilst the others varied from 50% to 71% before the end of the academic year. It is worth acknowledging, that of the seven learners identified at risk, five of these learners subsequently failed to pass the overall qualification as reported in section 4.6.4 of this chapter.

4.6.6 Learner Profiles

Learners within this single case study group were subsequently categorised into three distinct types:

- Type A (learners who failed to achieve with good overall attendance)
- Type B (learners who failed to achieve with poor overall attendance)
- Type C (learners who achieved)

Type A

These five learners (labelled learners #1, #2, #5, #8 and #10) consistently attended all sessions. Whilst two of the learners in this group were identified on the attendance risk register, with checking of records and/or early intervention this was minimised and both learners attained 100% and 92% overall attendance before the end of the academic year. Two of these learners had previously studied English as a Second Language, however both were considered competent in their spoken language. Both dual tutors commented that the latter two learners struggled on a weekly basis with their written skills and would often only use a limited vocabulary in weekly

[25] Automatic risk register reports are generated from college register records and information management systems on a daily and termly basis.

exercises and independent tasks. These two learners passed two of three assessments, with no achievement on the writing assessment.

All Type A learners shared a number of similarities. Each of them were considered engaged in weekly sessions and completed their independent study work. Prior to joining the group, all of these learners had attempted their functional skills assessments the previous year and had failed to achieve any passes in reading, writing or speaking and listening. Learners also had also made three or four attempts, continually failing to achieve in one or more assessments throughout the year. One of the tutor's commented during interview that "learner's sometimes feel they have failed before even attempting to sit the exam… repeated failure often leads to poor motivation and we often have to spend time just making them feel better about themselves to get them 'pumped'… [this] is always harder as the year goes on". It was also observed through personalised target setting that these learners were, despite feeling dejected by repeated failures, continually trying to succeed and all attended additional workshop sessions before each assessment.

Type B

Three learners (labelled learners #3, #14 and #15) were persistently poor attenders in the group; recording 60%, 71% and 50% respectively. All of these learners were 'returners' and had previously studied their main vocational subject area and functional skills at the college in the previous academic year. In all instances, learners were studying functional skills English at a lower level than their main vocational study programme. Whilst the dual tutors for this group were new to them in the academic year, they were observed making comments like "*I've done this before*" during disciplinary meetings, and one commented that these learners: "*… were capable but believe they are above studying it*" and "*have been disengaged since the start of the year*".

To encourage them to attend, teaching practitioners within the FE college had contacted parents, linked learning to UCAS or job applications and on more than one occasion walked these learners to their scheduled assessments. Despite these efforts, all three learners had failed to attend an assessment [recorded to awarding body as 'no show'] and, as a result, failed to achieve their qualification. One of the tutors commented: "*it was a real shame… one of the learners received an unconditional offer from their university so did not attend the final assessment… and the other two had completed their main vocational programme early so went on holiday… It is frustrating when they could have passed if only they had turned up!".*

Type C

A number of learners (labelled learners #4, #6, #7, #11, #12, #13 and #14) were a mix of students with both good and poor attendance, however all seven passed their assessment and achieved the full qualification. In the majority of instances, learners passed their assessment on a single attempt. It is worth noting there was one exception; learner #4 required two attempts to successfully pass the reading assessment. The same learner was also the student who achieved the lowest attendance record of the group at 57%, and had recorded a period of significantly poor attendance before the first assessment attempt. Both dual tutors commented that the group had mixed abilities and attitudes to learning, where most were engaged in class. They had received positive feedback on their teaching delivery from student survey data; departmental reports show 89% of students enjoyed their learning at college and 87% felt supported by their tutors.

One of the tutor's reported that some of these learners were exceptionally motivated and delighted after passing their first assessment, which they felt gave them an added advantage and confidence boost for their second and third assessment later in the year. They also commented that most of these learners had a peer who was also in their same class for their main vocational programme of study and therefore more likely to engage in class

activities because they felt at ease in the room and familiar with other students in shared friendship groups. It was observed that of these seven learners, five were studying their main vocational subject at level 2 and two students at level 3.

4.7 Summary of Analysis and Findings

The chapter presents results of the FE college case study college in response to the ME strategy. This section summarises the main research findings of the investigation, before highlighting the researcher's own additional insights from the data collection process and analysis.

4.7.1 Key Findings

The main findings of the FE college case study showed that:

- In the first year of the ME strategy and the removal of Level 2 functional skills, achievement in GCSE Maths and English were consistent or exceeded national averages, whilst Level 1 functional skills in both Maths and English achievement were below and considered inadequate;
- Whilst achievement success was evident at GCSE level, attendance was significantly lower than expected college targets whereas functional skills was in line or above expected attendance targets despite low achievement;
- In response to the ME strategy, only three subject areas within the FE case study college completed the initial vocational mapping process. The level of detail added to planning documents varied significantly and was inconsistent in output. Nevertheless, participants in response to the staff questionnaire found it improved their overall teaching compared to previous years;
- In most instances, teaching practitioners were more likely to link functional skills to vocational study with the use of 'embedding', although the concept felt 'forced' among tutors and some reported a backlash from learners who preferred to study their main vocational subject rather than Maths and English;
- Staff responses on the use of dual tutors was mixed, with some acknowledging the benefits to learners and others observing the disengagement effect of tutors who often felt unsupported with little training on the role;
- Based on a single sub-case study group of learners and dual tutors that followed the ME strategy, overall achievement was significantly lower than

expected college targets with 47% achievement. Three learner profiles were developed that indicate some of the issues, characteristics and attitudes of students who had/hadn't achieved their qualification in the group.

4.7.2 Researcher Insights

Whilst the main research findings are presented, there were areas of the investigation that were considered in the researcher's notes that warranted further acknowledgement. As identified in Chapter 3 of this thesis, the role of an action researcher provides a useful 'insider's view', limited by other methodologies that would be hard, if not impossible, to replicate. As a result it was decided that, even though absolute truth cannot be established, there were knowledge claims that were still valid in that they could be logically inferred (Vine 2009). Therefore to recognise these areas of enquiry and absent voices in the initial data collected, additional insights and findings central to this thesis' discussion chapter, see Chapter 5, were summarised.

Discrepancy in attendance and achievement data

The data collection results identified an interesting finding with regard to the relationship between attendance and achievement. It is well established in both teaching theory and practice, that high attendance is linked to increased likeliness of achievement (Taylor 2012). However, the results of this study are contradictory to this in that it shows a discrepancy whereby attendance and achievement are adversely linked. It would be naïve to conclude that poor attendance leads to increased results, but this lower attendance does deserve further attention that is beyond the scope of this study. Some possibilities may have stemmed from learners who are working at higher levels of English and/or maths and therefore could be selectively choosing sessions to attend based on prior knowledge and/or areas where they are/are not weak. Alternatively, in other instances it may be that some sessions have less impact on a student's learning than others, e.g. subject-specific teaching delivery and exam preparation techniques may have more or less influence on some learners than others who gain

more or less knowledge from one than the other. Whilst speculative at this stage, the issue is worth future debate and investigation.

Adverse impact of Ofsted inspection

During the period of data collection, the FE college case study were observed as part of a full Ofsted Inspection. To maintain anonymity, the final report and grading of the inspection were not reported in this thesis. However it is critical to acknowledge the impact of an inspection on the college, as changes to key members of SMT and teaching delivery staff occurred. As a result, champions of the ME strategy and similar initiatives were critically reviewed and/or in some instances removed. Furthermore, the ramifications of these changes led to low staff morale and general uncertainty within the FE college. Whilst it is impossible to assume that this influenced student achievement and attendance, staff feedback or other areas reviewed in this study, existing literature suggests that the data is consistent with Ofsted inspections having adverse effects on exam performance (Rosenthal 2004, p.150). One previous study found two-thirds of Heads felt inspection did not lead to improvement, whilst another suggested only 35 per cent of schools felt the benefits outweighed the bad effects of inspection (Thomas 1999). Little research exists on the impact of Ofsted visits at FE colleges. Further investigation could provide a starting point for future research interests and cultural studies that evaluate the timescales it takes to bed in such as the ME strategy and/or initiative.

Power Imbalance

Participants involved in the study often used revealing language or expressions that indicated at times a power struggle, i.e. "*forced*", "*imbalances*" or "*isn't any great conversations*". In some instances, there were times when staff would imply a 'them and us' mentality when referring to SMT. On other occasions, SMT used similar language when referring to an awarding body and/or the Government. Whilst it was noted that Fielding et al. (2005) accepted practitioners would often avoid sharing of good practice, or would not share until substantial time had passed with their

peers, the sense that a wider regime outside of the ME strategy was in play was noted by the researcher. As first coined by Coffield & Edward (2009) the education system is "akin to playing the biggest train set in the world, where 'the cycle of intervention [is] dictated by the internal dynamics of the political process rather than the real needs of the system' and those who work within it". Whilst the government rarely concern themselves with strategic issues, they are often involved with policy around how practitioners should teach. The results of this study continually found training for staff as an area for improvement, however it appears the requests were less around policy and more about development. This power imbalance, where tutors feel disqualified and SMT ineffective, has ultimately exacerbated the fear of failure and contributed to a lack of genuine conversations among stakeholders. Undeniably this fact of practice requires careful investigation as practitioners feel unable to exercise judgement and managers appear timid about what doing the right thing looks like. This is a critical point of discussion in the design, implementation and review of organisational change and its application to wider audiences.

Limitation of planning and practice

It was noted throughout this thesis that secondary data collection was used to compile written documents. Whilst a discussion of advantages and disadvantages of this data collection technique is discussed in Chapter 3, in context this led to a much wider area of interest about the tenuous relationship that teaching practitioners may have to paperwork and planning in theory, as opposed to delivery in practice. It is acknowledged by the researcher that whilst commentary of these documents were presented, judgement was avoided. Put simply, because a teaching practitioner makes fewer comments in their planning documentation does not necessarily indicate that his or her practice is good or bad. The relationship between planning and delivery was outside of the scope of this research. However, the differences between thinking (i.e. planning) and recording (i.e. practice) must be further explored to build a richer picture of what is good practice and is realistic and/or most valuable long term.

Chapter 5: Discussion

5.1 Introduction

This thesis has extended the scope of the role cross-curricular embedding of functional skills Maths and English has been used within an FE college. Using a two-phase research design a variety of quantitative and qualitative data collection tools were applied and a comprehensive investigation of the case study college was explored. In the previous chapter, independent results and findings including learner profiles had been established in an attempt to bring together accumulated facts into a coherent and orderly structure that provided both direction and impetus to the research, and extend that which had been left previously unestablished in academic and practice-based literature to date. As an action research approach was adopted, the need for critical reflection based on the evidence gathered was required to inform changes in practice. This section presents the research findings with wider contextual references to academic literature.

Two important caveats need to be addressed. Firstly, the role of critical reflection and the impact of the FE case study college findings are presented from the perspectives of three stakeholders that underpin this thesis, i.e. government, SMT and teaching practitioners. Whilst students/learners were acknowledged, the decision was made that they were outside the scope of this research and require future investigation. To be considered, the researcher highlights that the research design would have required more relevant data collection tools and techniques to successfully engage with the 'student voice' (Harfitt 2017). The second caveat is, due to the lack of prior research studies focusing on the FE sector, the decision to use existing literature from wider areas of interests such as education-, business- and psychology- fields, provide an interdisciplinary approach to the problem and foundation for understanding. Whilst in some instances these are limited by context, the value of embracing complimentary ideas, approaches and scope far outweigh any challenges and conflicts in bringing together

different languages, directions and judgements of others (Cuevas et al. 2012).

5.2 Government Policy and Response to Audits

This section sets to show how with good intentions the government has set out to deal with the real issue of poor literacy and numeracy in education within the UK, and the ways they have tried through many reforms to address this over the last half century. However, it is clear there is a recurring theme as the wave of political party agendas have demonstrated time after time no real progress in terms of Maths and English achievement in society to date (Garner 2013). Furthermore, as the 'climate of fear' surrounding Ofsted's inspection audits continues to grow, common forms of response as shown in the case study college highlights the need for a much wider debate of ensuring government policy making and intervention is facilitating support in the FE sector, rather than flexing its stranglehold (de Waal 2006).

5.2.1 Setting Achievement Outcomes without Input

In the UK until the 1960's, the opinion of achievement was largely second to the focus on teaching practice and improving the quality of learning. The Butler Act did not attempt to control the secular curriculum, and whilst the grammar school curriculum was examination led, it was free and unfettered in primary and secondary modern schools (The Guardian 2004). With the extension of "all-ability" schools and more FE to prevent the wastage of talent of those who left school at age 15 to follow a craft or technical career (Trowler, 2003, pp.1-5), recommendations were clear that "authorities and governing bodies should not judge their modern schools by public examination results" (Gillard 2010). Before long, the perverse drive to divide learners on the grounds of 'academic' and 'non-academic' added a catalyst for elitism to the whole agenda that distracted efforts and improvements that set hundreds of thousands of students up to fail, especially those with poor social mobility (Browning & Sippitt 2017).

Whilst there were many reforms and reviews, often prompted by teachers' complaints that testing arrangements were considered too unwieldly, student performance continued to be monitored with written tests and assessments. This rapidly became an accountability tool in the form of league tables (Tymms & Merrell 2007), where the use of exam achievement as a marker for success has endured. Therefore narrowing public perception of education to simply exam results and figures that little account for natural swings as talent and circumstance ebb and flow (Menzies 2017). Based on the results of the FE college case study, this was considered below national averages with Level 1 functional skills English at 37% and maths at 32% respectively. Yet exam achievements were in line with predictions including overall functional skills and GCSE qualification types improving year-on-year. In the same instance, a single Science & Technology group achieved 47% pass overall in Level 1 functional skills English, which was considered poor even though learners of the same group recorded 87% pass in both reading and speaking components. What is unclear when reflecting on these figures, is which piece of data is considered the success? Buried in existing policy expectations is a lack of clarity and understanding of the term 'policy'.

As recognised in the literature, policy is a 'loose term used to cover value commitments, strategic objectives operational instruments' (Finlay et al. 2007). The implication of which allows a wide range of activities to be legitimately labelled with the term, and any differences in focus crucial to correctly interpreting and evaluating views on its conditions (Nixon et al. 2008). As has been observed throughout history, the wave of government policy continued to evolve with the introduction of national curriculum and Ofsted that led FE, with its own unique provision of courses and funding restrictions, subject to the same rules and expectations imposed at primary and secondary level. Despite the FE sector's design and structure being different to its competition, colleges were simply forced to 'fit in' (Gaze 2018). The government had enforced a minimum leaving age to 16 in 1972, increased to 18 in 2015, requiring young people to stay in education or

training until they achieved or were of age. With this dictated and prescriptive nature came a somewhat passive-aggressive assertion that 'Ofsted knows best' that led reform after reform – each of which finding different excuses for why literacy and numeracy were either staying the same or getting poorer. There has never been a real review of these reforms as they were continually criticised, removed and/or replaced with every shift in political leadership.

The most current Government policy stipulates that school leavers up to the age of 18 must achieve Maths and English to at least a grade C or equivalent as a condition of funding. However as the results of this research and extensive review of government statistics show, at no point has this been achieved or evidenced since its conception. Nevertheless, what is evident is the feedback and criticism of such a policy target by practitioners, senior managers and society alike, who have contributed little to its discussion and review. As previous research (see Coffield et al. 2007) had identified over a decade ago, there is no systematic feedback loop to enable 'frontline' tutors, managers and institutional leaders to report back to policy makers on the strengths and limitations of these reforms. Therefore, those who struggle to make the reforms work, and know most about how they impact on practice, have been fundamentally excluded from the conversation (Coffield et al. 2007; Harrison 2012).

As the FE sector attempts to meet targets within policy initiatives and reforms, concerns over achievement continue to be ignored as colleges are frequently condemned for their efforts rather than rewarded. At the end of 2016/17, only 46% of general FE colleges were judged good or outstanding (Gaze 2018). The government's efforts to diversify Maths and English has created learners who are often disinterested or who "think maybe it's not their subject", that has arguably led to a society that is more accepting of, for example, "not having a maths brain" (Attard 2016). The Wolf report (2011) with its less than supportive findings to efforts in FE appeared to focus on the vocational provision and did little to address the reality in

terms of distance-travelled or motivations of students' pre-entering FE. Reports that show a national decline in prior achievement is often overlooked and has little influence on the basis by which government standards are formed and achievement results interpreted. Offered in one light, the FE college case study has shown evidence of exceptional growth and improved reading and speaking skills, progressing the abilities with the majority of learners in one group who had failed to achieve any part of a qualification previously. On the other hand and as often presented, the same group were underperforming by failing to meet expected exam achievement targets and require immediate improvement.

Whilst Wolf (2011, p.83) highlights many of the dysfunctional relationships with funding in the sector, a large portion of the blame for poor achievement rates had been attributed to institutions that "deliberately steered their students away from qualifications that might stretch (and reward)". Many Government advisers and leaders advocate for recognising only GCSE as the priority and duty of post-16 education (Igoe 2014; Wolf 2011). Research findings at this stage could support initial recommendations from Wolf (2011, p.83) that raising aspirations by encouraging learners to achieve qualifications "that might stretch (and reward)" has shown an increase, as oppose to the widely expected decrease, in overall achievement in GCSE Maths and English. As Chief Ofsted Inspector Sir Michael Wilshaw suggests the underperformance and failure of colleges that simply aren't delivering what's needed are to blame: "and they betrayed my frustration with the fact that so many young people who failed to reach the grade in maths and English at 16 still haven't got these key qualifications two years later". Yet the results of the FE case study would support that for 45% of learners who fail to achieve a pass at functional skills, or 70% for GCSE English and 81% for Maths, the need to continue functional skills as an alternative is critical for learners who would be vulnerable of reaching the age of 18 without any qualification. Martin Doel the Chief Executive of the Association of Colleges responded to Wilshaw's attack that Ofsted had failed to point out that the sample of

inspected colleges was skewed by their "risk-based approach [which] focuses inspections on colleges with weaker results" (Belgutay 2016).

If we can fairly assume that the FE sector are not deliberately depriving students of a good quality education with qualifications to match, the need for open debate and discussion around measurable achievement is a reasonable invitation that should be offered by policy makers. Unlike schools that failed to meet the same requirements pre-entry with five years of teaching and funding, FE colleges provide a wider breadth of qualifications to support a student's journey at significantly lower cost. Amanda Spielman, Her Majesty's Chief Inspector, has set out her view that "government should use the forthcoming spending review to increase the base rate for 16 to 18 funding" (Ofsted 2018). FE colleges continue to be faced with ever-changing targets and benchmarks that make it difficult, if not impossible, to meet without a feedback loop that builds a richer and shared understanding of the problem on the student journey to provide a long-term solution to Maths and English skills. The need to review achievement outcomes is critical to minimising confusion and interpreting discrepancies between what *was* expected, what *is* expected and what *should be* expected.

5.2.2 Cultural Shock in Response to Ofsted Inspection

'I don't know how they did it, how they managed to miss the point so badly' (Stronach 2005, p.7). Like many, Ofsted inspections and subsequent appeals alike, comment on the indictment of the inspectorial process. The 'audit culture' that surrounds education providers offer insight into the defective culture and ethos of government agencies and the lengths they will go in order to make sure that evidence and reason do not get in the way of policy and prejudice (Stronach 2005). Others have gone as far to suggest that 'too often advocated with a convenient mixture of populism and arrogance, the system for inspecting schools in England carries with it an over-confident and brusque carelessness born of too much power, too much questionable data and too little thought' (Fielding 2001). And yet,

despite some seeing their involvement as indicative of an underlying aim to 'police' the sector (Gleeson et al. 2005; O'Leary 2012), they show education as a high priority in the government's reform agenda.

In 2004, Ofsted published two parallel reports on FE – 'Why colleges succeed' and 'Why colleges fail'. According to Ofsted, 45 of these colleges were deemed to be 'failing' as they were too focussed on 'processes and procedures' as opposed to outcomes for learners. By its own reckoning, 'failing' suggests that 15 years of direct and often radical intervention in the sector have brought little change promised by education ministers (Whitehead 2005). Similarly, a comprehensive review of perspectives on inspection in FE colleges carried out by Smith (2007) showed a divergence of opinion between the inspection regimes and those being inspected. The latter regarded this as something threatening rather than an opportunity to get advice and improve, i.e. as something to survive rather than as an opportunity for co-operation, reflection and development. Perception in these situations often influences reactions, which are more likely to evoke a response to minimise the threat. Ever more so heightened when observation lacks or is limited from having a professional voice in the policymaking process.

Whilst the reasons as to why institutions may feel like this cannot be generalised or presumed from a single study, the impact of an Ofsted inspection may have led to the deterioration of the ME strategy initiative at the FE case study college. At a time when one of the most important research questions in the field of strategic management is the performance differences between those that compete with each other and the way to sustain competitive advantage, research studies have revealed the importance of organisational culture in order to be innovative and create positive effects on business performance (Acar & Acar 2012). As a public serving educational establishment, a typical FE college shares many traits with any other private sector business. Colleges compete with other providers for resources as a market function, and it has been suggested

that self-regulation would be a major step towards a new settlement for FE; e.g. a new approach to governance and accountability outside of the government's direction would enable colleges to respond more fully and accurately to learning needs (Howard 2009).

As the more disembodied elements of performance management come under scrutiny, an intriguing question is raised as to whether marketisation has had the paradoxical effect of restoring professional power by reconstructing professionalism through compliance or contestation (Ranson, 2003). According to Stronach et al. (2003) such identity formation constitutes a powerful narrative ethic that allows professionals to 're-story' themselves in and against the audit culture. At one level this manifests itself in creative and routinised compliance, i.e. rule following. Whereas on the other hand it may result in the fabrication of activities designed to meet targets with which professionals do not readily identify, i.e. rule breaking (Ball, 2001). The latter involves mediation, contestation and redefinition among professionals negotiating or exploiting contradictions where audit cultures do little more than hold professionals and students to account (Gleeson et al. 2005, p.456).

Exploring culture literature in more detail, the stages of cultural shock as adapted from UC Berkley (2013) shown in Figure 16, shares the uncanny resemblance of the cultural response to Ofsted inspections within an FE college. Whilst the model was originally designed to illustrate the cultural adjustment of those who move between two different countries or cities, the typical pattern and distinct phases, i.e. honeymoon, crisis, recovery and adjustment, show the same cycle of adaptation before and after a college-wide observation.

Figure 16: U-Curve Ofsted Cultural Phases (adapted UC Berkeley 2013)

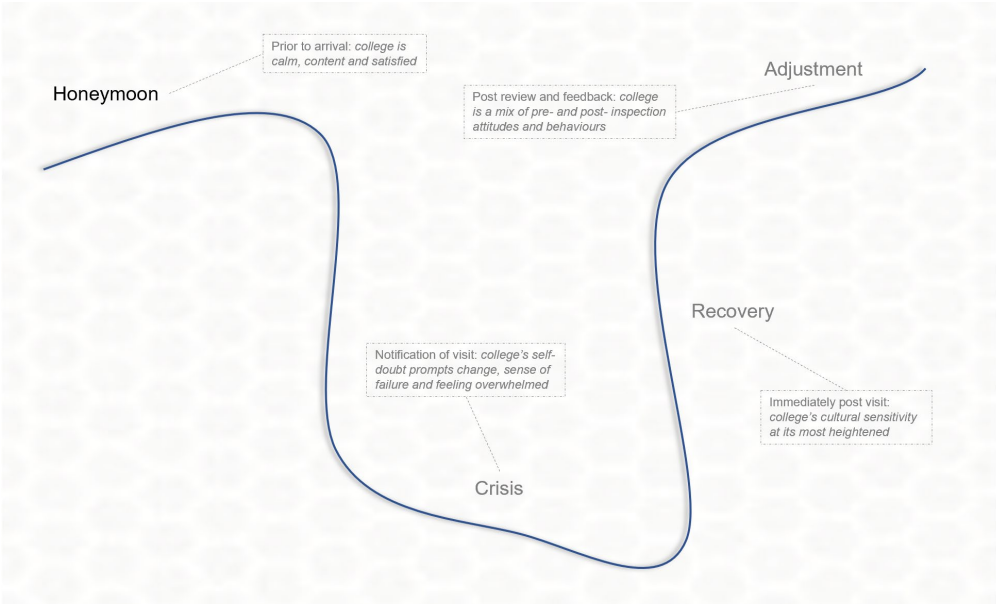


Table 15: U-Curve cultural stages in response to Ofsted inspections at FE case study college

Cultural Stage	Ofsted Triggers	Response by FE college
Honeymoon	Prior to arrival	• Focus on good practice, new strategies and initiatives and positive practices of the college • Staff are optimistic and comfortable in their role • College culture is calm, content and satisfied
Crisis	Notification of visit and during inspection	• Shift in focus – questions arise as to what is or is not appropriate practice • Staff are initially shocked, followed by feelings of anxious, disoriented and confusion to their role • College culture is that of self-doubt prompting change, and a sense of failure and overwhelmed
Recovery	Immediately post visit and inspection	• Period of self-reflection whereby staff recover quickly after feelings of doing well or slowly cultivate a blame culture from performing poorly • College cultural sensitivity at its most heightened
Adjustment	Post review and feedback	• College adjusts and feels more comfortable with its initial response to recovery • Staff become more flexible and objective about experience • College culture is a mix of pre- and post- inspection attitudes and behaviours

By reframing the narrative to expose the context of an Ofsted inspection visit at the FE college case study, the cultural response followed a similar U-curve process as summarised in Table 15. In the honeymoon phase, the FE college were more likely to focus on the positive aspects of their practice

and behaviour where staff were at their most optimistic and comfortable with their environment. As expected from a significant period of observation-free time, the college culture could be described as calm and generally satisfied. On the announcement of an Ofsted inspection the crisis phase, often termed in the original contextual literature as 'culture shock', led to a significant decline resulting in feelings of anxiety, surprise, disorientation and confusion when the college were suddenly obliged to reflect and adapt some change to their environment. The culture shock brought about uncertainty as staff within the college began to question what is appropriate and what is not. Often during a period of rising self-doubt, withdrawal and sense of failure grew, regardless of the Ofsted outcome, and overwhelmed those involved. In the aftermath of the Ofsted visit, staff handled the recovery phase differently where cultural sensitivity was at its most heightened. At a critical time of self-reflection, the college may[26] recover quickly after feelings of doing well or may recover slowly as a result of poor performance and stories circulate of what was or was not observed. The latter, may result in some staff members cultivating a period of blame culture (as documented by Earley 1998). As the college begins to feel more comfortable with its initial response to recovery, staff become increasingly flexible and objective about the experience through adjustment and acceptance. A mix of pre- and post- inspection cultures begin to mix where some behaviours remain the same as that prior to visit and in other instances change in response to feedback.

It is worth noting that this highlights a significant discourse that arises between an initiative or strategic approach that takes time to produce measurable results, such as an ME strategy, and its conflict with an Ofsted inspection that changes immediate priorities. Even if the ME strategy as used by the FE case study was having some positive impact on student achievement and/or distance travelled, the ability to test its holistic success

[26] Note: Researcher's choice of language and scenario discussion added to anonymise Ofsted inspection result of case study college

was naturally thwarted due to their arrival. It is no surprise that the single group of learners in Science & Technology, as explored in section 4.6 of this thesis, performed significantly poorer in their writing exam that was completed after the Ofsted inspection when compared to reading and speaking results that were completed before. The challenges for educational establishments to balance short- versus long- term priorities should feed into the feedback cycle at national level to ensure change is embraced, valued and encouraged to make it easier for SMT and teaching practitioners to engage with.

Findings of the investigation into the single FE case study college resulted in the significant decline in support of the proposed ME strategy in the aftermath of an Ofsted inspection. In private sector industry, strategic management theories (see Huber 2011) have long established a recommended process for proposing a new initiative, with careful implementation and, for most considered essential, critical review. However, in the example of the FE college case study, the challenges of an Ofsted inspection appear to have shifted the cultural environment of the organisation so much so that it mimicked what some may consider to be an extreme or disproportionate response in the abandonment of planned initiatives and strategies without monitoring, review or reward (Bodenmuller 2014; Edinger 2012). The fact that reports show many resemblances among other FE colleges that feel the same way (e.g. de Waal 2006; Smith 2007; Stronach 2005; Rosenthal 2004; Thomas 1999) highlights the unspoken tension that creates a cultural uncertainty leading to negative disruption and discourse in response to Ofsted. As a self-reporting agency whose power to inspect lead all those whose responsibility it is to govern (Tryl 2018), how will honest feedback be truly delivered if they are the only stakeholder not at risk of losing their job. As Ofsted are the major driver of this gamesmanship, they are in the elite position to facilitate the feedback loop and put a stop to this adverse façade (Critchley 2017). Whilst the researcher acknowledges that other FE colleges or educational establishments may face similar difficulties or likewise a

different response, future investigation and research to develop, validate and explore this model is recommended.

5.3 SMT Shaping Strategies and Leading Change

This section captures a very significant but unsung achievement of FE colleges, who have "taken in students whom no one else wants to teach", namely, those in this case who have failed to gain GCSE Maths and English at the age of 16, and, through sheer hard work SMT and practitioners are "restoring them as human beings who begin to see themselves again as worthy of respect and who can succeed in gaining qualifications" (Coffield et al. 2007). As SMT continue to make life changing college-wide decisions, their responsibility to shape strategies and lead change is critical to its success. However the imbalance of power, lack of confidence, and subsequent change in behaviours, were influenced largely by stakeholders that affect strategic direction as reflected in the FE case study college.

5.3.1 Shaping Strategies in Changing Circumstances

A decline in prior achievement, pre-entering FE, is often overlooked and yet has little impact on the basis of which government standards and expectations have been based. If we consider the student journey, whereby results show that at age 11 a third of students are under performing and before they reach 16 almost half either continue or are joined by others who are not achieving their expected grades in Maths and English, the very notion that FE colleges are to blame as inferred by Wolf (2011) are easily refuted. As has been noted before, over ambition in setting goals by policy makers instead of practitioners, obscures the size of the challenge for those who must make things happen on the frontline (Coffield & Edward 2006). Whilst anonymously criticised in popular press (see The Secret College Tutor 2014), a popular review supports the notion that college tutors are expected to "do in 36 weeks what teachers fail to achieve in 11 years". Any achievement in Maths and English studied at FE, is argued as a miracle with a mere 36 hours of allocated time funded for a single functional skills

subject (Wolf 2011, pp.158-159) and 50 hours for GCSE resit (*Education & Skills Funding Agency* 2017) in an academic year. This is what the ex-boss of Ofsted, Sir Michael Wilshaw, is unwilling to acknowledge in his tirade of the "inadequate at best" FE sector and presumption that putting 16 to 19 year olds in schools (Burke 2016) is the only remedial measure, despite them already not achieving within these parameters at secondary level.

However as shown in the results of the FE case study college, the ability to shape and implement an ME strategy is a challenge in the face of poor attendance, fear of failure and low perceived competence. Ever more so if the students initially enter the FE sector with low abilities in Maths and English. Therefore some progress as a result of studying a functional skills qualification is better than the repeated and continued failed use of GCSE. It is within these situations that SMT in FE are in a much better position to see the big picture and should be trusted to make the judgements necessary to increase the life chances of their learners and not just to produce qualifications (McGrath 2013). It is therefore critical that leaders within FE have the opportunity to share this at policy level, and with a better understanding could rethink reforms and strategies before roll-out.

Acknowledging the concerns made by Wolf (2011) that these decisions have in the past been funded-led due to the pay by qualification model; it would be fair to assume if funding were changed to a per student basis that FE colleges would continue using relevant workplace qualifications such as functional skills. Whilst assumptive, this is based on the simple and highly likely belief that students would be in a better position for employment after achieving some qualification than none at all (Dawe 2018). Whilst outside the scope of this research, there is a call for further discussion on the barriers in primary and secondary education provisions that have disproportionally focused resources on the borderline of targets because of Ofsted's increased attention on data and attainment gaps (Hutchings 2015).

As it is not unusual for learners in FE to have a 'chequered past in terms of their formal education', FE can be particularly attractive to students who are at risk of disengagement or are returning to education after a period of dropout (Rogers 2016, p.39). It was encouraging to discover that the FE college, whilst recognising some negative learner perceptions, equally described learners who were engaged, confident and more importantly learning. FE colleges have shown that despite the challenge they can achieve success in Maths and English, and in some instances are indeed leading the way and not falling short as has been previously concluded. This has been raised, argued and shared by leading academics and teaching practitioners in the field for over a decade; e.g. Coffield et al. (2007), Lawy & Tedder (2009), and Waite, Karen & Kersh (2012).

However it was clear that even within a single organisation, commitment to the ME strategy varied after implementation. There were vocational areas within the college, despite receiving the same information, that were neither aware or followed the college-wide strategy. Similarly, the planning documentation required was inconsistent in output. Where some teaching practitioners within some vocational areas added significant detail, others were brief and inexplicit in terms of forward planning. Whilst SMT had presented the initial case for the ME strategy, a lack of further input to define clear expectations and follow-up with reward or enforcement was less evident within the college. Lessons learned from previous research studies shows that eliciting support for the strategy becomes one of the preconditions for successful implementation. This could have been better supported with an increased use of champions (Frazier 1997, p.124) and/or super tutor roles (Stork & Walker 2015). Needless to add, in the process of eliciting any support from staff, it is expected that strategy objectives become modified or distorted in the process. This again demonstrates the long-term nature of Maths and English initiatives that requires a number of yearly cycles to further develop in process – with each idea or new development taking notably longer before showing any direct improvement in student success. Notably, SMT within the FE case study college in this

instance were inactive in the repeating of messages to maintain both commitment and staff understanding (National Institute of Educational Planning and Administration 1988). Similarly the absence of staff training was frequently identified by members of the FE college as an area for improvement to the overall ME strategy. On reflection, it is clear that without the extended timeframe and resources to review and reflect on the ME strategy, the problem it had hoped to solve continues to grow and the college's opportunity to change becomes ever more difficult to sustain.

The literature had identified a number of national subsidised enhancement programmes in Maths and English to help FE lecturers teach the growing number of students preparing for resits and functional skills (Offord 2013a). As a case study of an FE college that utilised vocational tutors for the delivery of functional skills maths and English, lack of training would have first seemed unexpected. As highlighted by Harden (2015) the reality is that not all vocational tutors have the confidence, as their subject-specific skills set were the basis of their employment and only now, after taking on Maths and English, have the goalposts shifted. Consequently, as comprehensively reviewed by Casey et al. (2006) the attitudes of practitioners taking dual responsibility for teaching vocational and functional skills was in most instances challenged; findings from the case study college found instances of staff appearing to share the same reactions. This raises the issue of what support is available in the FE sector. The ETF plays a role in bringing stakeholders together as a government-backed sector-owned national support body and charity as guardian of professional standards and professional development provider (ETF 2018c). Although this does lead back to a wider importance of identifying who the external stakeholders that help FE colleges improve are and how they are responsible for ensuring teaching practitioners are given the tools, resources and knowledge.

As existing literature demonstrates (see Greatbatch & Tate 2018), the growing attack on teaching practitioners' own qualifications continue to lead

discussions around its causative effect on their learner's Maths and English success. Therefore, in terms of long-term investment, the reallocation of resources to improve training is relatively small compared to the costs of failing to implement new strategy (National Institute of Educational Planning and Administration 1988). However despite all the money that the government continues to spend on recruitment (Offord 2013a; Young 2014), no evidence exists that this has made any real impact on national achievement of Maths and English, and future studies would benefit from exploring this further.

5.3.2 Leading Change

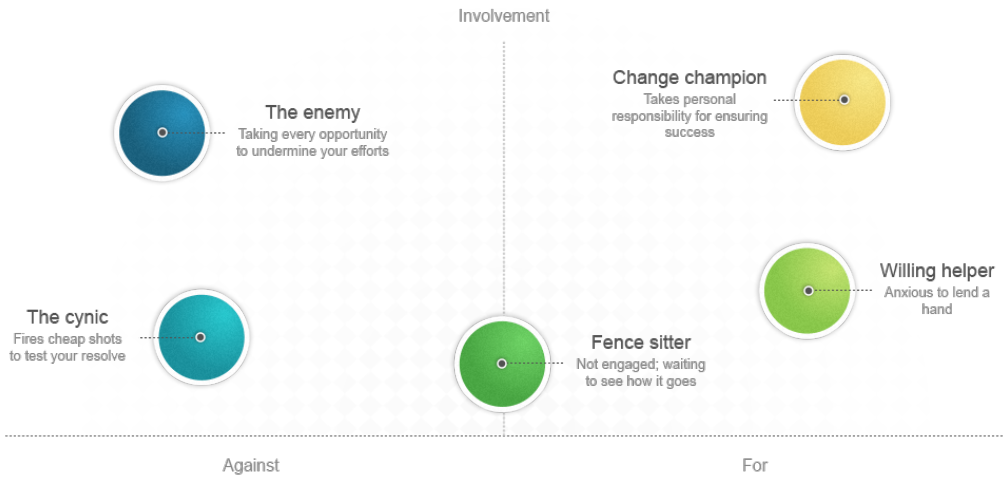
The literature (see Briggs 2004; Collinson 2007; Leader 2004) indicates that managers in the FE sector play an important role in implementing organisational change policies and programmes. However one report found 90% of leaders from colleges encourage staff to decide what they will do (i.e. leading by consensus) and 97% of leaders try to provide direction for their team. At the same time 88% of leaders let their staff get on with their jobs. In this sense, leaders are more likely striving to perform activities that at times are incompatible. Reminiscent of the work of Collinson & Collinson (2005), conflicting demands made by FE teaching practitioners of their leaders suggest that they do not have a consistent pattern of leadership behaviours and may use different approaches in different contexts. Whilst this reflects the situational nature of leadership, it also suggests the tensions inherent to the FE sector (Collinson 2008).

The research findings of the FE case study college prompted the suggestion that a wider regime outside of the ME strategy was in play as SMT and teaching practitioners shared similar language of a 'them and us' mentality. The imbalance of power where tutors felt disqualified in their role and SMT felt ineffective. In September 2003, The Independent (2003) published an article entitled 'A Distinct Lack of Principals', which reported on the worrying conjunction of fewer applications for vacancies in FE. Similar to the difficulties shared in Maths and English where a current shortage of

specialist teachers and lack of expertise had been recognised, recent reports suggest principals and senior leaders also do not necessarily have the expertise to lead a large organisation (Camden 2018). However what is often not discussed is that FE is subject to greater central direction and management than other education sectors that leave it open to more extreme forms of managerialism, stricter auditing disciplines and severe funding changes (Hodkinson et al. 2008). Combined with the need to establish, manage and develop positive relationships with a wide range of stakeholders, it could be argued that SMT lack real decision-making and subsequent influence as they face continued scrutiny (Page 2017).

The number of stakeholders continues to grow in FE that directly include SMT, Heads of Departments, teaching practitioners and student-learners as mentioned throughout this thesis; in addition to indirect stakeholders such as government, DfE and Ofsted, who influenced part of the process and/or delivery of the ME strategy. An example of stakeholder disposition towards an educational establishment is presented in Figure 17. In an ideal situation, FE colleges would want all stakeholders to be at the top right-hand corner, actively involved and championing the ME strategy (National College for Teaching & Leadership 2015).

Figure 17: Stakeholder disposition (National College for Teaching & Leadership 2015)

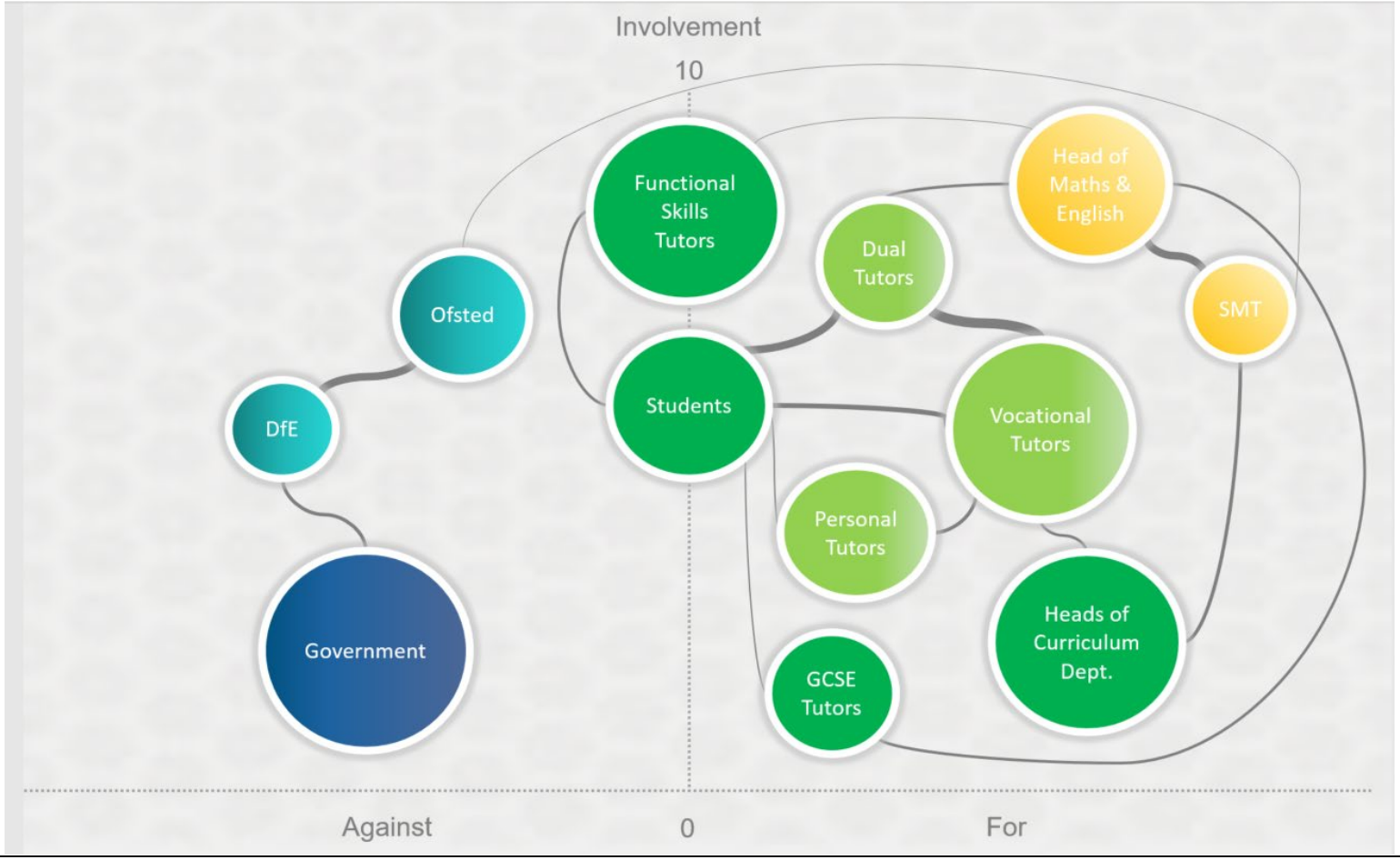


To make sense of its unique environment, illustrated in Figure 18 and as recommended by the National College for Teaching & Leadership (2015), a stakeholder influence analysis and map of relationships that exist between stakeholders[27] of the FE case study college was created. This map, through the lens of the action researcher, represented another aspect of the underlying power relationships that were considered to exist at the college that visually showcase the working FE environment. A summary of the following stakeholders and their roles are outlined.

- In the role of the 'enemy' – national government – were the only stakeholder that were found to undermine FE college efforts. As demonstrated in the literature, much of the narrative from government representatives highlights, on a number of different occasions, a high volume of criticism that is so often publicly displayed and shared. Their continued attacks on FE (e.g. Hodgen et al. 2010; Harrison 2012) and restrictions on funding (Wolf 2011) indicate their general expressed lack of support.
- In the roles of 'cynic' – Ofsted and DfE – were the stakeholders considered to undermine efforts in FE. As noted in earlier sections of this chapter, their presence alone acted as a catalyst leading to uncertainty and scepticism in the FE college case study, coupled with a vast degree of inconsistency in opinion on inspections (Rosenthal 2004) and in framing wider political agendas (Higton et al. 2017).
- In the roles of 'fence sitters' – students, functional skills tutors, GCSE tutors and Heads of Curriculum departments – were the stakeholders who, at times, were the least engaged and waiting to 'see how it goes'. In light of the FE case study college, these stakeholders were inconsistent in their views. Whilst many responded or were reported acting positively to the ME strategy, as suggested in the literature from similar studies (Fielding et al. 2005) they often return to former behaviour if left unchallenged. Thus, less

[27] This was achieved by drawing lines that connect two stakeholders in the map where a relationship currently exists. The thickness of the line indicates a subjective rating of the relative strength of that relationship – the closer the relationship, the thicker the line (see National College for Teaching & Leadership 2015).

Figure 18: Stakeholder influence analysis and map of relationships that exist between stakeholders at the FE case study college



(adapted from National College for Teaching & Leadership 2015)

engaged with the notion of a new idea as they are with conforming until a new approach and/or a shift in priorities arise.

- In the roles of 'willing helpers' – dual tutors, vocational tutors and personal tutors – were the stakeholders more likely lend a hand on the ME strategy and get involved with the success of the ME strategy at the FE case study college. In most instances, these are teaching practitioners on the 'frontline' (Coffield et al. 2007) from the sub-case study group who were not directly accountable for its success, yet were committed to the strategy and its delivery to support learners.
- In the roles of 'change champions' – Head of Maths and English and SMT – were stakeholders personally accountable in ensuring the ME strategy success at the FE case study college. In terms of design and monitoring its success, these people were consistently most involved and encouraging change until a shift in priorities and/or other influencing factors.

The literature prescribes that leaders in FE are required to choose a strategy that is congruent with context, and yet are often forced to operate within a marketised topography (Page 2017). This is outside of the scope of this thesis, nevertheless sets the foundation of an often unexpressed perspective and contextual background that can be used for comparison and debate in future research.

More poignantly what the evidence presented shows is that the sector needs to be given the flexibility for leading change that allows room for professionals to act according to their own judgement of the local situations and within a set of national principles, e.g. learning is about more than gaining qualifications, professionals should be able to decide "what works" and improvement in learning requires critical reflection at all levels from government, college, tutors and students (Hodkinson et al. 2008).

Furthermore, it makes a difference if the change in institutional practice, as evident in the introduction of an ME strategy, has a voluntary feature. Even though that feature may not be free of reluctance or the anxiety engendered by risk taking or the perception that one has to roll with the punches, it sets in motion the dynamics of problem creation through

problem solution. A lesson learned from the FE case study college is to not confuse a change in policy with a change in practice. As identified by Sarason (1990) that change is not necessarily achieved through applying new or good ideas but in the unlearning of what custom, tradition and even research have told them is right, natural and proper. The lack of confidence in SMT, at the top of the administrative pyramid who recede their position when stakeholders such as Ofsted arrive, who change their thinking and practice is too frequently the case and shows an extreme form of professional parochialism (Sarason 1990, pp.101-106).

5.4 Practitioners' Roles, Attitudes and Expectations

The forming and re-forming of professional identity is seen as increasingly significant, and contested thought, among FE teaching practitioners. The concern is not simply with a tutor's identity in him- or herself, but with how their identities fundamentally contribute to the nature of the teaching and learning process (Bathmaker 2005, p.5). Those working in the FE sector often enter teaching after establishing themselves as a professional within another space and, as a consequence, bring to their teaching role a range of values that add further complexity. This is often cited as an effect of culture in an organisation, social/professional interactions and an individual's self perception (Turner 2009). Practitioners' identities will be framed in this section through discussions as to their perceptions of the roles performed by working with the ME strategy, including their experiences of embedding Maths and English and barriers to change.

Existing research studies commonly explore staff values and beliefs including aspects of teaching and learning, but little evidence presents how embedding has been carried out successfully in FE to improve examination results or, more importantly, a learner's skills set of knowledge and understanding. On first inspection it appears that the very definition of the term is largely incoherent and ever-changing. As this is outside the scope of this research, the decision was made in line with participant responses,

that the term 'embedding' for the purposes of discussion is considered the link between functional skills Maths and English to vocational subject areas. In its entirety the ME strategy was designed on the use of embedding functional skills across the college, promoting a unified approach to vocational and functional skills teaching and delivery.

5.4.1 Practitioner Efficacy

The impact of a teacher's behaviour and attitude on student performance has been extensively reviewed in the literature (e.g. Wenglinsky 2002; Rockoff 2004; Armstrong 2014), with little discussion of the relationship student performance has on a practitioner's effectiveness. Many teaching scenarios are the epitome of ill-structured situations because of the problems involved in teaching a classroom of students with widely varying intellectual, social and affective differences (Gregoire 2003, p.149). Findings from the FE case study reported on a single group of students and attempted to show distinct characteristics of learners in light of achievement and attendance, i.e. Type A, B and C. This was inherently specific to the FE college and too small to be generalised, however an extension of this evidence prompts review into the locus of control in terms of student outcomes that can vary the level of self-efficacy demonstrated by teaching practitioners (Wolters & Daugherty 2007). For example, a practitioner's efficacy may be higher when dealing with Type A learners, who regularly attend and are engaged in lessons than Type B who fail to achieve due to their lack of effort and/or attendance. In more popular press this is taken further to suggest that "many teachers identify their favourite students as those who perhaps struggled with their subject but worked hard, persevered and would ask for help" (Oxford Royale Academy 2017). A study commissioned by the DfE has similarly reported that staff have been found to show bias and personal feelings that have gone on to influence their assessment decisions in the past (Henry 2013). Researchers argue that teachers with a higher sense of efficacy tend to exert more effort in planning and delivering lessons, and also set goals that reveal higher instructional aspirations and enthusiasm than those with a lower sense of

efficacy (Allinder 1994; Wolters & Daugherty 2007). If this is considered true then it could also be inferred that a teaching practitioner's efficacy may vary group-by-group or year-by-year depending on the progression or turnover of learners. Future investigation would benefit from a longitudinal research study that reviews the history of practitioners' attitudes and behaviours to delivery in response to the different learner types as a means of testing these assumptions.

Moreover, teaching practitioners' sense of efficacy may also play a role in the types of instructional decisions such as assessment that is likely to affect decision making of the dominant goal structure (Wolters & Daugherty 2007). The results from the FE college found that practitioners expectations of their learners were associated more with how they evaluated their own performance goals, i.e. demonstration of competence, than rewarding themselves for their own mastery goals and achievement, i.e. development of competence. This also illustrates a common conflict among academics, where performance-approach goals frequently appear to generate positive effects (Harackiewicz et al. 2002) despite mastery goals receiving wider praise for its association with higher levels of learning (Wolters & Daugherty 2007). Nevertheless, the literature (see Patrick, Kaplan & Ryan 2011) has shown strong and consistent support for the theoretical predictions that mastery goal structure is associated with a wide range of adaptive motivations, satisfaction with learning and achievement. If this were the case then, as noted previously in section 5.3.1, the need for the ME strategy to follow-up with some form of reward practice such as student self-reports of mastery goal structure (e.g. Koskey et al. 2010) is recommended.

5.4.2 Experiences of ME strategy and Barriers to Change

It cannot be ignored that in a world where everyone is unique and diversity is encouraged concerns of a 'one size fits all' strategy, ever more so in education, in critics view is considered ridiculous (Weale 2016; VanSlyke-Briggs et al. 2015, p.56). Instead it is argued that FE colleges should seek to have a wide range of strategies that can be employed to support all

learners and professional practice across a wide variety of courses that reflect the differentiation of standards, cultures and learners (Greatbatch 2018; Lucas 2002). However, there are natural contradictions in that variety often fails to focus efforts and results in too many students failing to achieve their qualifications (Foster 2005). In light of the FE case study college, the majority of teaching practitioners responded positively and saw improvements to their teaching compared to previous years when a unified strategy was not prescribed.

However, there were exceptions: e.g. *"I'm not engaged, I'm not focused on doing this… this is just an add on job*". In this instance the results of the case study appeared to support previous literature like that of Casey et al*.* (2006) that practitioners were not convinced that they should teach Maths and English as a vocational tutor. Whereas some commented that "*embedding of Maths and English should be ongoing*", others highlighted "*some opportunities in lessons it was quite natural, you could embed the Maths and English in there but some of them you couldn't and it was really forced*". The same research found that learners were twice as likely to fail when practitioners were asked to take dual responsibility for teaching vocational and LLN, or were solely taught by non-specialist LLN practitioners (Casey et al*.* 2006, pp.11-14). The literature review identified reforms that reduced guided learning hours for Maths and English (Wolf 2011), which inevitably has led some practitioners and subsequently some learners to feel that vocational subject-specific teaching was more valuable than Maths and English. Lack of time is often identified as an on-going cause of frustration and increased stress among practitioners (Wilson 2004 p.33). Ever more so when teaching practitioners perceive Maths and English as 'bolted on' to main study programmes, and they are required to make tough choices about whether to provide the same level of support in Maths and English that falls outside their main subject-specialism (Casey et al*.* 2006, pp.28-31; Okolosie 2013).

Despite the lack of time, many of those involved in the FE case study college found planning to be a useful tool in teaching and delivery of Maths and English. The list of advantages as to the on-going best practice of planning for teaching practitioners in education from the literature is extensive (e.g. Burden & Byrd 1994; Killen 2006; Orlich et al. 2012; Moore 2012). The basis of which forms the foundation of knowledge for novice teachers and teacher-training programmes (see Gravells 2017; Petty 2018). However this has more recently been criticised in light of changes to the Ofsted inspection framework that have removed the need for practitioners to show evidence of the more time-intensive lesson planning documentation (Ofsted 2018b). Whilst this does not suggest practitioners are expected to no longer plan, Ofsted has advised that "inspectors are interested in the effectiveness of planning rather than the form it takes" (Ofsted 2018). The case study college is evidence that these changes in expectations has led to a disparity in documentation produced. This is considered more alarming when the majority of tutors were more likely to consider Maths and English when planning, and fewer practitioners considering this when teaching and motivating their learners.

It is however difficult to assume that any form of planning is the same as delivery. In popular literature the notion that experienced teachers should not have to plan lessons has been argued; citing that plans invariably do not work as they are not derived from learner's needs, with many written prior to meeting them and inevitably are so rigid that they induce a sense of guilt and dereliction of duty when they are altered mid-lesson (Clarke 2015). Nevertheless, it could equally be argued as an imperative learning device for practitioners that, at the very least, can be used to scaffold a lesson, build confidence in the subject and as a tool for focusing efforts. As planning is outside the scope of this research, the inconsistency in its use across the education sector continues to be debated even within the new Ofsted framework plans. It moves towards disparaging its significance, as the focus shifts to reducing teacher workload (Roberts 2018).

Whilst this highlights the extensive pressure on practitioners "spending too much time marking or writing up lesson plans instead of focusing on teaching" (Clarke 2015), it raises concerns as to the effective monitoring of the ME strategy and the identification of good practice shown by the college. For example, some practitioners may have produced little written planning documentation and delivered more knowledge in sessions, and others who planned with significant detail may have in practice conveyed very little to their learners. In addition to the limitation this would have on the research methodology and design as presented in this thesis, lessons learned from such an approach point to the increased observation and/or internal review to minimise or deter practitioners from avoiding the embedding of Maths and English altogether. Without this added security, it would be difficult to establish any form of success or failure of the overall ME strategy and the bearing this would have on progressing learners' skills.

Whilst considered by most policy makers as a powerful tool in the continuing professional development of teaching practitioners, there has been concerns about how lesson observations have been used in some colleges (National Education Union 2014). To the delight of many, Ofsted abolished graded lesson observations in FE and prompted them for the first time to implement their own institutional policies of observing teaching and learning to prepare for impending inspections (Burnell 2015). Nevertheless, some practitioners reported feelings of resentment at having to be managed and despite its design were considered an inaccurate performance management tool and worthless of professional development (Edgington 2013). The growth of an ME strategy to therefore include additional monitoring with the use of practitioner-observations in future requires careful consideration and examination.

The consequence of implementing any new strategy within an organisation can often result in reluctance and/or potential resistance to organisational change (Armenakis & Harris 2009). A practitioner's readiness and motivation to embrace new guidance, advice, and/or recommendations of

work in the literature appears to suggest that many do not change and are recalcitrant (e.g. Duffy & Roehler 1986; Fullan 1991). This would suggest that teaching practitioners resist doing whatever is being proposed because they want to cling to their old ways, and the change makes them feel uncomfortable (Richardson 1998). It is therefore unsurprising that the FE college case study results found some resistant to change, in particularly barriers that prevent an acceptance of the ME strategy. Whilst in some instances this is subtle or inconsequential, it does shape the role that practitioners play and their experiences. Results from the case study found practitioners agreed that barriers to mapping and inclusion of functional skills more often included lack of tutor time to provide teaching and insufficient training/information. This supplements the evidence found by previous researchers (see Greatbatch & Tate 2018) that 60% of practitioners reported spending no time at all on Maths and English.

There were those however who saw success within their areas and planned to continue using the ME strategy. Many of their responses mirrored good practice of embedding as recommended by McCarthy & Bagaeen (2014) including assessment feedback, enhancing employability/providing linkage with practice and use of specialisms. Although a number of practitioners identified these areas of good practice, the lack of collaboration among practitioners were highlighted as a concern. The ME strategy had set out to create a unified approach, without necessarily showing evidence of a unified method to sharing among staff members. The need to cultivate a community of practice (e.g. Curzon & Tummons 2013, p.125) within the college to create a culture open to sharing should be considered in future design and implementation.

5.5 Chapter Summary

This chapter consolidated the results and findings from the FE college case study to present new understandings and themes that emerged in light of wider contextual references from the literature. The concluding sub-

sections reflect on the methods and shortcomings from the research design, and summarise the directions for further research as featured throughout this chapter.

5.5.1 Research Design Limitations

Limitations of the research design were identified throughout this chapter, however three outstanding issues were considered relevant for discussion, i.e. researcher subjectivity, small sample size and reduced access.

Whilst the research endeavoured to be objective, and a methodological approach to the research was unrestrictive, such attempts also presented certain risks. Subjectivity in research is a topic that has led several discussions and debates (e.g. Howe & Eisenhart 1990; Ratner 2002; Morgan & Drury 2003; Shapin 2012), and identifies issues of projection on behalf of the researcher (Kahn 1996), limitations due to the researcher's own blind spots (Drapeau & Letendre 2001) and a sometimes unclear demarcation between what belongs to subjectivity and what belongs to delusions (Brillon 1992). It is important to "own" subjectivity in research (Drapeau 2002) and it is acknowledged this would have influenced the research and subsequent conclusions drawn. The cultural stages in response to Ofsted inspections and stakeholder influence analysis map for example, as presented earlier in this chapter, is bound by the knowledge and experiences of the researcher. Nevertheless, as argued by Peshkin (1988), subjectivity is the basis for a researcher's distinctive contributions to knowledge, which comes from joining personal interpretations with the data that have been collected and analysed. Thus, subjectivity is a necessary limitation and advantage in this research.

An inherent limitation of using case study research methods is that they provide very little basis for scientific generalisation since they use a small number of subjects (Zainal 2007). The research implications and issues surrounding the use of a small sample size were considered and noted within the presentation of results and discussion of this thesis. More specifically, it is acknowledged by the researcher that small sample sizes

and/or low participant response occurrences often result in limited data for analysis, poor distribution and representation of users (Anderson & Vingrys 2001; NADBank 2012). Nevertheless, despite these concerns, the process and presentation of real contextual data was found to far outweigh the disadvantages. The data was readily available and, even though limited, instrumental in capturing FE sector relevant research.

The final limitation was relevant to both the researcher's access and prescribed ME strategy used by the FE case study college. Irrespective of the comprehensive research methodology, the need for additional resources such as data collection tools and access to participants could be sought in future to better understand some areas of inquiry identified in the discussion chapter. As previously mentioned, a limitation of the research design was the lack of evidence produced to compare planning of teaching versus actual delivery of teaching. This may have been possible with the use of lesson observations however would have resulted in additional areas for concern of the research design, e.g. Hawthorne effect (recognised by Adair 1984) or potential researcher bias of the data collected (Gratton & Jones 2003, pp.159-161) and/or withdrawal of participants not in favour of this approach (see Edgington 2013). Regardless, the lack of data collected in this area and access to participants precluded a more thorough investigation of the case study's more anomalous results.

5.5.2 Directions for Further Research

Fertile areas for future research has been purposively acknowledged throughout and a number of topics in the FE education sector highlighted. Some areas where research is lacking were initially highlighted in the literature review as presented in Chapter 2. Whilst some of these have been addressed by the research in this chapter, others remain unresolved.

Firstly, it is acknowledged that the development of any form of epistemology consists of numerous data sources, empirical evidence and models to represent the environment in such a way as to maximally simplify problem solving (Heylighen 1993). Therefore it was accepted that the

parallel existence of different interpretations, even where some may seem contradictory, are necessary in research to reach an ever more collective understanding of the term 'embedding'. There is no one approach as to where the interpretation or application may come from, e.g. trial-and-error or built up from scratch by practitioners' knowledge, however it has offered a starting point for future research. It is also recommended that prospective researchers insure a valid use of subjectivity in their research endeavours, e.g. carrying out validation and data analysis in groups to obtain consensus or use of a "discussant" during the research process (Lincoln & Guba 1985 in Drapeau 2002) to provide researcher scope.

Fundamentally, the research carried out in this thesis was limited by time. As the research area continues to progress, the wider community will continue to find new or alternative strategies to support the embedding of Maths and English that extend the solution of the research problem. Furthermore, the strategies prescribed may inherently need changing or those deemed unusable may become effective as FE sector colleges climates change. At the same time as future investigations explore the fruition of marketisation of colleges or longitudinal research studies report on practitioners' attitudes, in whichever way the research area evolves, this research provides valuable techniques and present results that can be directly applied to other FE colleges or academics in comparative studies.

Finally, there were also several areas for further development, and applications for, the work undertaken in this thesis. The need to validate and explore conceptual models created by the researcher should be considered. This would give a better impression on model performance and allow for comparison between the results of more than one case study. Similarly, an extension of research relevant to the wider education community, such as primary and secondary education providers, that play a crucial part to the larger contextual puzzle. This would help to confirm, and possibly to quantify the magnitude of, the research problem for further debate. Lastly, a comprehensive review of government spend on

recruitment to measure impact is critical. The effects of which would provide practical recommendations for high-level decision-making and philosophy.

Chapter 6: Conclusion and Recommendations

6.1 Chapter Overview

Maths and English continues to be a fundamental pre-requisite to becoming a member of a society and leading an enriched working life. However, as the evidence shows, poor maths and English achievement is a long standing issue in the UK; the cause of which resulting from limited funding and a 'blame culture' that exacerbates relationships between education establishments as they blame the other for its own shortcomings. In spite of this, policy through study programme and inspection has forced this issue as a priority for FE colleges, as an increasing number of students are not literate or numerate in their post-16 choices and are expected to close this attainment gap before entering the workplace or higher education.

The challenge for FE colleges to meaningfully make an impact is continually sought with the use of internal strategies and/or initiatives such as those used by the FE case study college and its ME strategy. The ME strategy signals an over-emphasis on data-led review (i.e. diagnostic assessment, vocational skills mapping, audit and learning walks, pre-scheduled exam times, attendance monitoring and quality review process) and an under estimation on the importance in CPD (i.e. staff training and sharing good practice & forum). This research provides further scope of the issues involved with Ofsted frameworks and the role of SMT in tackling the problem, and emphasises the real lack of funding to engage teaching practitioners with improved training. This ultimately raises the question over adequacies from local responses to address such a long standing problem? And do these same constraints affect the wider FE college sector?

To synthesise the chapters presented throughout this thesis, and illustrate the key research findings, recommendations relevant to these stakeholders, i.e. national government, senior managers and teaching practitioners, is first presented. It also summarises how far the aims and objectives of this research have been fulfilled, before offering final comments and reflection on the process of performing action research.

6.2 Recommendations

Recommendations have been sought in both academic literature and educational establishments to date. The decision was made to provide recommendations on policy, leadership and teaching practice relevant to the roles of three distinct stakeholders, i.e. national government, senior managers and teaching practitioners, and their influence with regard to the research problem. The recommendations outlined in this section reflect existing literature, results of FE case study college findings and build on the discussion as presented in Chapter 5.

6.2.1 To National Government

National government plays a more direct role to setting direction of travel through policy and funding, wider engagement of staff and overall impact of education than any initiative or internal strategy could influence (Elken and Wollscheid 2016). If used well, such as the case of Ireland that has shown national priorities and funding schemes that provide an incentive for widening research (Raffe 2011) or by celebrating success and lessons learned from international processes of learning through comparison (Mourshet et al. 2010), policy can grow and broaden national learning efforts.

Recommendation: Less reform and more reflection

The tension between coherence and fragmentation has been an enduring characteristic of historical educational policy. Reforms often discourage institutional memory and the culture of innovation that makes policy-makers unwilling to recognise continuities with the past. Likewise, the pursuit in a 'deficit' model of reform continues to try and correct the presumed weaknesses of the education system (Raff 2011) rather than taking the time to engage conversation with those on the front-line. Whilst Ofsted play their role in identifying good practice in further education (see Gov.uk 2015), development of practice can only be truly cultivated through reflection. Studying only successful systems is not the best way to discover the sources of their success. Nor does it reveal the range of issues and factors

to consider when designing or implementing a policy, or more critically the things that may go wrong (Raffe 2011).

Historical reforms often follow a pattern of outcomes improvements as a means to stabilise the system, reduce variances between educational establishments and ensuring basic standards are met. The evidence provided from this research suggests that this should instead be driven from stakeholders, i.e. teaching practitioners and educational establishments, to better inform instructional practices that lend themselves towards learning organisations rather than profitable establishments (Mourshet et al. 2010). It is unsurprising that a major concern in the UK is the unforeseen effects of these reforms that incentivise qualification attainment over knowledge, progression and innovation. This, of course, has a productivity cost associated with it, in that often more able pupils from poor economic and social backgrounds fall behind. This is particularly important in the UK context with its tale of poor achievers, which is most obvious amongst poor and disadvantaged students (Machin and Vignoles 2006). In this instance, and most relevant to this research, those that progress to further education to study vocational main study programmes without literacy and numeracy at expected national level.

Recommendation: An Ofsted framework that rewards change

The announcement of the next Education inspection review for 2019 (e.g. Lawler 2018; Burke 2019; Whieldon 2019) suggest that Ofsted is ready to place less emphasis on achievement rates alone and greater emphasis on progress and destination data. As these proposals form the foundation of how Ofsted inspect schools and colleges, the need to reward change is critical in encouraging leaders and practitioners to challenge the norms that have previously only prevented or sustained minimal growth of learner achievement in maths and English. It has been commended that the new framework will empower schools and colleges, and reward them 'for doing the right thing by their pupils'. This is in contrast to former attempts that have achieved good results at the cost of personal development and the delivery of a broad and balanced curriculum in the past. "Those who are

bold and ambitious and run their schools with integrity will be rewarded as a result" according to Amanda Spielman, Her Majesty's Chief Inspector (Severs 2019). Whilst this signals a change in attitude and focus of policy-makers, this like many other changes to Ofsted frameworks will take time to filter through to ground level (Davies 2015).

Nevertheless, the notion of a reward should be more than simply an 'outstanding' Ofsted grade. Whilst this is considered controversial by some education providers due to its exemption from routine inspections (Harris 2014; Espinoza 2016), it also lacks any long-term incentive to innovate. Sir Adrian Smith's government commissioned 16-18 review recommended that: "In view of the low GCSE success rates and new GCSE requirements… there should be fresh consideration of appropriate curricula and qualifications for these students and the extent to which current policy incentivises these to be offered". With this the announcement that government would launch an £8.5 million pilot to "test innovative approaches" is welcomed in 2020/21, but may fair as a mere drop in the ocean in terms of costs, that could see only minimal impact at local rather than national level (Foster 2018). As FE has faced serious funding cuts over the last decade (Education & Skills Funding Agency 2017), it is an area that requires some careful thought and review in light of both GCSE's and functional skills. Existing policy has proved controversial and there have been calls for it to be dropped or amended, as students with a grade 3/D should be allowed to study functional skills qualifications in English and/or maths rather than GCSEs (Welham 2014).

Beyond the scope for answering in this research, it raises the question about how can Ofsted move from short and/or sharp inspections to long-term sustained improvement that requires a much needed national cultural change. Whilst the ME strategy as identified in this thesis could have been developed in its second phase to upgrade efforts of collaboration between other FE colleges and/or providers, there is no opportunity to get to this stage for further review. Plans for the new Ofsted framework and its

promise to give the curriculum a renewed focus may prompt re-balance of priorities in the future (Schools Week 2018; Severs 2019).

6.2.2 To Senior Managers

In recent years, 'effective leadership' has come to be seen as vital for improving organisational performance, particularly in the UK public sector. This view has informed the launch of various government-funded bodies within education specifically designed to improve leadership, such as the Centre for Excellence in Leadership (CEL). Within the leadership literature, 'effectiveness' remains a contested terrain (Collinson and Collinson 2013). Informed mainly by functionalist assumptions and focusing on leader's behaviours and competencies, heroic discourses have been highly influential. For example, effective leaders are typically deemed to provide a clear sense of direction, be strategic, inspirational, charismatic and self-confident, communicate a vision, and foster trust, belonging and commitment (Bryman, 2007). However, one flaw with this line of thought is ignoring the situational and environmental facts that play a role in a leader's level of effectiveness (Bennett et al. 2003, p.27).

Recommendation: Give SMT the opportunity to innovate

To create innovations, we need innovators, and many of them at many levels. Though innovation is often a spark originated in the mind of a bright person, it needs an environment that can nourish the fire. This environment is formed and fed by educational institutions, societal culture, and advanced economy (Serdyukov 2017). Long-lasting changes require "[…] a mixture of cultural and institutional changes, commitment from those within the program, and active and engaged leadership," (De Leon 2013, p.347). The LIFES inquiry defined innovation not as invention but rather as 'the season's new growth': how every new generation of leaders adapts and responds to their context. With this clear approach to examining innovative leadership through change, we are in a better position to review the system in terms of what they are aiming for and how in a changing context they are working to arrive at the destination. All too frequently change is responsive rather than mission led and genuinely innovative. The business of learning and

the learning business is not the same. It is not just about maths and English achievement and attainment of qualifications and grades; but delivering improved learning and teaching and building strong partnerships to ensure that the education provision on offer is the best it can be for learners. Yet the sector faces its own challenges, and innovation requires the freedom and flexibility to experiment and try out new ideas. Many sector leaders and stakeholders have complained about the ever-changing policy landscape in FE and skills. Leaders within the sector have been afforded very little space for thought leadership, innovation, and to offer their own best practices to the rest of the sector (Sheerman and Silver 2016). Research is needed to support the notion that collaborative leadership development, i.e. how can our internal processes be made available and used as a resource to teach us as well, be used to develop our SMT. Furthermore the infrastructure to support this is provided, and more imperative funded, to capitalise on lessons learned and experience shared.

To achieve innovation, Sutch et al (2008) identify that 'Champions of Innovation' engage more readily with stakeholders and share findings with practitioners outside of the education context by bringing external influences into the classroom. Likewise local level initiatives that link up to wider national strategies to promote innovation mean that staff will have access to better support (Scrimshaw 2004). Furthermore, while it is important that school leaders develop shared approaches to defining and implementing innovations, it is also key that they look outside their immediate environment. Part of this value of outward facing practice allows education professionals greater access to resources and training to support the realisation of innovations. Nevertheless, this would all be for nothing if national level institutions such as Ofsted do not support the aims of innovative practice, including the recognition of principles of innovation relevant to the local context. At this level, leadership would have an impact on innovation through ensuring the longevity of policy direction, and through regulatory bodies support of innovations in context (Kirkland and Sutch 2009).

6.2.3 To Teaching Practitioners

There is a school of thought that in education, efficiency of learning is determined by the invested time and cost. Learning is more efficient if we achieve the same results in less time and with less expense. Thus, if we can achieve more with less effort, productivity increases (Serdyukov 2017). However, in reality there are those that would suggest FE practitioners' role is more akin to the story of Little Red Riding Hood, who, influenced by the lure of Grandmother's cottage, are not quite prepared for what was awaiting them inside. Such fables often contain within them a message and in this case it is clear that, despite the problems faced by those on the frontline, it is possible to navigate an acceptable path through the forest of teaching bureaucracy, as well as battle with the constant demands to motivate students and meet targets, provided there is some support along the way (Thompson and Wolstencroft 2012).

Recommendation: Join a community of practice

A lack of training and support in the delivery of maths and English could ultimately be better achieved with the use of a community of practice. The term 'community of practice' is of relatively recent coinage, even though the phenomenon it refers to is age-old. A growing number of people and organisations in various sectors are now focusing on communities of practice as a key to improving their performance (Gannon-Leary and Fontainha 2007; Wenger-Trayner and Wenger-Trayner 2015). Formed by people who engage in a process of collective learning in a shared domain of human endeavour its use in education has in the last decade evolved online. This allows for peers to exchange ideas 'around the water cooler' in a virtual space, sharing and benefiting from each other's expertise, which also encourages colleagues to jointly commit in the development of better practices. Simply investing in the technology however is not enough. To sustain an online community that can support in-service teachers as they engage in the three- to five- year endeavour of classroom reform or grow professionally toward mastery (Renninger and Shumer 2004), requires engagement and time. As was first recognised in the FE case study college,

and in the design and influence of their ME strategy showed, the need for training and support to develop teaching practitioners was limited in comparison to auditing and monitoring. This leads to the question if training for staff was underutilised or did financial constraints limit the availability of these opportunities? Or was this unattractive or untenable for SMT to make available for staff after the Ofsted inspection? The need to capture feedback in the area suggests further research is required to build upon.

To avoid situations where teaching practitioners hesitate to contribute out of fear of criticism or misleading the community or simply because they prefer to shy away, the educational establishment must set institutional norms promoting institution-based trust and standards for sharing knowledge. A coherent framework would reduce the anxiety associated with uncertainty and instil a moral obligation to share (Ardichvili et al. 2002). This effortlessly aligns with the ETF's (2018c) professional standards to evaluate practice and contribute to organisational development and quality improvement through collaboration with others. Thus as a national support body, ETF have the opportunity to initiate and bring together teaching practitioners in further education using a virtual space to prompt and facilitate discussion of maths and English that support existing CPD and training already on offer (see Society for Education & Training 2016). Furthermore, as government pledge their support for reduced teacher workload (Roberts 2018), this should ultimately free some of the time saved from unnecessary administrative tasks to focus on their teaching and practice. Thus returning the focus of FE teachers to trying different methods, developing subject understanding and encompassing different pathways, structuring lessons differently to maintain engagement and embracing a different learning culture (Higton et al. 2017).

6.3 Research Aims, Questions & Objectives Revisited

The rationale for the research was to critically appraise the use of bespoke strategies, such as the ME strategy used by the FE case study college, as

an example of policy design around maths and English used within further education. This research endeavoured to explore and reflect the latest policy strategy in response to the growing concerns for achievement in Maths and English among young people, in line with Government reform towards achieving long-term societal improvement. In light of the FE case study college journey, the impact of the ME strategy was investigated and shared in this thesis with the wider community.

The aim of the research were therefore to *investigate the role of cross-curricular embedding of Maths and English within a further education college.* In order to achieve this, the research questions were:

1. What is the impact of current practice to embed maths and English?
2. How can the embedding of maths and English be studied in practice?
3. How is the embedding of maths and English implemented in practice?
4. Can areas of current practice, good and bad, be identified?
5. What are the lessons learned for improving maths and English outcomes?

The aims were achieved by answering the five specific research questions as set out above. The following section summarises how far the questions have been fulfilled in light of the research objectives and the conclusions reached as a result of this research.

6.3.1 Question 1: What is the impact of current practice to embed maths and English?

This was addressed in Chapter 2, where a thorough review of the literature presented a knowledge foundation from which the research could learn and build upon, ensuring the research conducted for this thesis added to, rather than duplicated, existing or other on-going work. In light of the historical research problem and continued poor literacy and numeracy in the UK, the literature lacked practical solutions and little evidence presented how embedding had been carried out successfully in the UK education sector to improve student's examination results or knowledge and understanding. On review, it appeared that the very definition of the term was largely

incoherent and ever-changing. As this was outside the scope of this research, the decision was made that the term 'embedding' for the purposes of this research is considered the link between functional skills maths and English to vocational subject areas. As a result of the literature review, a number of gaps in the literature were identified, which paved the way for action-based research to identify good practice in the planning and delivery of maths and English in main study vocational programmes.

6.3.2 Question 2: How can the embedding of maths and English be studied in practice?

This objective was met in Chapter 3, which began by exploring a variety of research philosophies, methods and data collection tools in order to determine those most suitable for the research design. The research philosophy thus followed a pragmatic approach, which placed the research problem as central and valued the differences between paradigms, unlike others, to promote a mixed-method approach to research. The decision was made to capture both quantitative and qualitative, primary and secondary data, sourced from a single FE case study. As concluded in Chapter 1, the ME strategy was centre to the investigation and a two-phase research framework was outlined. The first phase collated secondary data on areas including achievement, attendance and vocational mapping. Whereas the second phase involved primary data collection tools such as questionnaires and interviews to gather feedback from participants. To complement these phases, the use of a single sub-case study allowed for data triangulation to bring together a variety of data sources and provide deeper insight into the research problem.

6.3.3 Question 3: How is the embedding of maths and English implemented in practice?

This was achieved in Chapter 4, which presented the results of the ME strategy used within the FE college case study. The data analysis found that in the academic year of its use, GCSE Maths and English were consistent or exceeded achievement; whilst Level 1 functional skills in both subjects were

below achievement targets and considered inadequate. In contrast attendance was significantly lower than expected for GCSE delivery, whereas functional skills was in line or above expected targets despite low achievement. In response to the ME strategy, only three subject areas within the college completed the initial vocational mapping process. The level of detail added to planning documents varied significantly and was inconsistent in output. Nevertheless, staff found the ME strategy had improved their overall teaching compared to previous years. In most instances, teaching practitioners were more likely to link functional skills to vocational subject areas with the use of embedding, although the concept felt 'forced' among tutors and some reported a backlash from learners who preferred to study their main vocational subject area rather than Maths and English. Staff responses on the use of dual tutors was mixed, with some acknowledging the benefits to learners and others observing the disengagement of tutors who often felt unsupported with little training.

6.3.4 Question 4: Can areas of current practice, good and bad, be identified?

This was addressed in Chapter 5. Critical reflection on the data collected from the FE case study college in light of previous literature provided some discussion on existing practice and its impact from the perspectives of three stakeholders, i.e. government, SMT and teaching practitioners. To illustrate these factors affecting the FE case study college, the researcher was in a position to bring models together to create a response to the Ofsted inspection and, a stakeholder influence analysis and map of relationships. Whilst these models were offered, it is accepted that this objective remains unfinished. The development of any form of epistemology is larger than the works of one thesis alone and, according to pragmatic epistemology, consists of numerous data sources, empirical evidence and models in the attempt to represent the environment in such a way as to maximally simplify problem solving (Heylighen 1993). Therefore a review on the methods and shortcomings from the research design, and directions for further research were presented.

6.3.5 Question 5: What are the lessons learned for improving maths and English outcomes?

This is concluded in this chapter. Recommendations to national government included the need for less reform and more reflection as FE challenge variables and factors in their own environment. In addition, an Ofsted framework that rewards change is sought to give educational providers the time and funding to make the changes necessary to influence student success, unlike the FE case study college where such an approach was disregarded and overlooked. More relevant to senior managers leading FE colleges, the opportunity to innovate is fundamental in engaging with stakeholders, developing shared approaches and adhering to outward facing practice that better challenges the shared problem of poor Maths and English results at local and national level. Finally, it were suggested that teaching practitioners join a community of practice to improve performance and facilitate discussion of maths and English delivery that could support existing CPD and training. Ultimately this would allow for the sharing and benefiting of expertise among teaching professionals.

6.4 Final Comments

This section serves to highlight the contributions of this thesis in light of theory and practice, and discusses the author's own experiences of performing action research.

6.4.1 Contributions to Theory and Practice

This thesis has demonstrated contributions to both theory (affirmation or development of evidence to inform or extend existing literature) and practice (method of inquiry to solve or activate a solution of problems).

Firstly, with regard to contributions in theory, the extent of the research problem nationally, i.e. increased number of learners with low literacy and numeracy skills as a result of poor education in FE (see Wolf 2011), was insufficient and unsubstantiated. As identified in Chapter 2, the literature to date lacked such scrutiny of published national statistics that the author

demonstrates is showing a significant rise in low prior-achievement at Key Stage level. This was overlooked despite it shaping the context of learners who often progress and/or are recruited to further education and provides further evidence for consideration by policy makers and national Government. Secondly, the researcher provided evidence of three 'learner profiles' that could be used by teaching practitioners to better prepare teaching and delivery of maths and English with more consideration of the student's issues, characteristics and attitudes for increased targeted support. Finally, a model consolidating the FE college case study response to an Ofsted inspection was summarised in Chapter 5. The model identified its journey, with reference to distinct phases, to illustrate a more comprehensive understanding of the patterns in behaviour and extend existing literature.

Finally, with regard to contribution in practice, the FE college's choice of ME strategy as presented in Chapter 1 and the results of its use as an example of policy initiative, provides senior management and others in the FE community with a choice of tried and tested solution to review and use. The results of this study were also used as the basis for recommendations to stakeholders as presented in this Chapter, which acts as a voice of experience for those considering similar strategies and/or initiatives in their own organisation.

6.4.2 Reflections on Performing Action Research

Performing research in practice has, overall, been a positive and productive experience. This thesis has demonstrated that applying a pragmatic theoretical approach can produce significant results and contributions to knowledge. Furthermore, the placement of an action researcher provided a very useful 'insider's view'. The insights generated from this approach would be hard, if not impossible, to replicate in a purely theoretical study. Since the research setting was my working area, I collected the data as an insider-participant observer. This role (being a member of a group as well

as the researcher) is considered the most important and challenging instrument in qualitative studies (Unluer 2012).

Although there are various advantages of being an insider-researcher, there are also problems associated. Firstly, greater familiarity can lead to a loss of objectivity. As an insider I was an accepted member of the FE college and perhaps a respected member among peers within the organisation. In this case, being accepted meant that I was friendly with many members of the staff in the institution. However, it is worth pointing out that whilst I maintained close social contact with many members of staff, I did not have much professional contact with them except for the staff in my team. Therefore, I carried out the research from within in the sense that I was on site, yet professionally was not an integral part in their implementation of the ME strategy in their curriculum areas.

It is also worth acknowledging that performing research in practice required the researcher to perform a difficult 'balancing act' – to gather research evidence that would endure academic scrutiny while also placing reasonable expectations on participants who were volunteers. Time was also a constant constraint in the environment under study and this had an impact on how research methods were applied within the case study college. Essentially this could have led to a simplification of the methods used, as it was considered better to use a simplified method in the available time rather than no method at all.

Another challenge was to remove my own biases of the goings-on within the organisation when reflecting on the data. As I was a relatively new member of the organisation, I did not have a deep knowledge about the events occurring in the organisation that arose prior that were raised in some participant's responses. Every effort was made to ensure the breadth and scope of responses were presented throughout this thesis. This led to natural contradictions and inconsistencies that should be welcomed in the data. I also want to mention that advisors played a critical role in supporting

the researcher while conducting this research to mitigate bias and as a soundboard to prevent problematic situations in the presentation of data.

Whilst every effort was made to review and reflect ethical issues using questions from Zeni (1998) and BERA (2011) guidelines before the research had begun, see Appendix 2, the research questions had developed from the initial proposal. In the later stages of determining the research questions, my insider status affected the process. Although it was easy for me to generate 'real questions' to which I already knew the answer, I had difficulties in developing questions to which I did not know the answer. The research questions therefore evolved over time and should be considered as such in light of the authors' narrative as presented at the start. I did consider all the ethical issues such as honesty, privacy, responsibility and fair share, which are inseparable from any research effort. Other than my own efforts as part of my role, I did not interfere with any situation regarding the use of the ME strategy in the case study college during the research process and I was determined not to play down certain aspects of my findings when I discussed them in this thesis.

The reflections on performing action research serve as support and evidence for future insider case study researchers in order to get valid insider research (Unluer 2012).

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Appendices

Appendix 1: Key Themes for Functional Skills Maths and English

Functional Skills English – Entry 3 Level

Week	Theme
1	Nouns, adjectives, plurals, alphabetical ordering
2	Verbs and tense
3	Proof reading, commonly misspelt words
4	Adverbs and adjectives
5	Skimming and scanning
6	Recognising text – instructional text and informational text
7	Recognising text – Persuasive and descriptive
8	Mock exam – reading
9	Mock exam – reading feedback
10	Exam – Reading
11	Sentence structure, noun/verb correspondence
12	Commas, full stops and capital letters
13	Verbs and tense
14	Building sentences – simple and compound
15	Apostrophes
16	Recognising formal and informal writing
17	Making lists
18	Mock Exam - Writing
19	Mock Exam – Writing feedback
20	Exam – Writing
21-24	Speaking and listening preparation – source documents
25	Corrections to speaking and listening
26-35	Revision, exams and mop up

Functional Skills English – Level 1

Week	Theme
1	Nouns, adjectives, plurals, alphabetical ordering
2	Verbs and tense
3	Proof reading, commonly misspelt words
4	Adverbs and adjectives
5	Skimming and scanning
6	Recognising text – instructional text and informational text
7	Recognising text – Persuasive and descriptive
8	Mock exam – reading
9	Mock exam – reading feedback
10	Exam – Reading
11	Sentence structure, noun/verb correspondence
12	Colons and semi colons
13	Verbs and tense
14	Building sentences – compound and complex
15	Apostrophes
16	Recognising formal and informal writing
17	Making lists
18	Mock Exam - Writing
19	Mock Exam – Writing feedback
20	Exam – Writing
21-24	Speaking and listening preparation – source documents
25	Corrections to speaking and listening
26-35	Revision, exams and mop up

Functional Skills Maths – Entry 3 Level

Week	Theme
1	Add and subtract 3 digit numbers
2	Rounding to the nearest 10 or 100, Number patterns.
3	Understand estimate and measure. Compare length, capacity, weight and temperature
4	Simple fractions (½ , ¼ , $^1/_3$, $^1/_{10}$,), understand denominator, numerator and equivalents.
5	Understand decimals (to 2 decimal places)
6	Simple calculations involving money and measure
7	Recognise and name simple 2D and 3D shapes and properties
8	Use metric units in everyday situations (Length -mm, cm, m. weight – mg, g, kg. Capacity ml and L.)
9	Extract, compare and use information from tables, lists, simple charts and simple graphs
10 - 11	Mock exam
12 - 13	Exam
14	Add and subtract 3 digit numbers, multiplication and division by 2, 3, 4, 5 & 10, Rounding to the neatest 10 or 100, Number patterns.
15	Understand estimate and measure. Compare length, capacity, weight and temperature
16	Simple fractions (½ , ¼ , $^1/_3$, $^1/_{10}$,) understand denominator, numerator and equivalents
17	Understand decimals (to 2 decimal places). Simple calculations involving money and measure
18	Recognise and name simple 2D and 3D shapes and properties
19	Use metric units in everyday situations (Length -mm, cm, m. Weight – mg, g, kg. Capacity – ml and L.)
20	Extract, compare and use information from tables, lists, simple charts and simple graphs
21-22	Mock exam
23-24	Exam
25-35	Revision, exams and mop up

Functional Skills Maths –Level 1

Week	Theme
1	Whole numbers and negative numbers. Add, subtract, multiply and divide. Add and subtract decimals up to 2 decimal places.
2	Ratio – where one number is a multiple of the other. Probability.
3	Use simple formulae expressed in words for 1-2 step problems
4	Understand and use equivalences between common fractions, decimals and percentages
5	Find mean and range.
6	Work out areas and perimeters in practical situations
7	Construct geometric diagrams, models and shapes
8	Solve problems requiring calculations with common measures (money, time, length, weight, capacity and temperature).
9	Collect and record discrete data and organise and represent information in different ways. Extract and interpret information from tables, diagrams, charts and graphs.
10 - 11	Mock exam
12 - 13	Exam
14	Whole numbers and negative numbers. Add, subtract, multiply and divide. Add and subtract decimals up to 2 decimal places. Use simple formulae expressed in words for 1-2 step problems
15	Ratio – where one number is a multiple of the other. Probability.
16	Solve problems requiring calculations with common measures (money, time, length, weight, capacity and temperature). Convert units of measure in the same system
17	Understand and use equivalences between common fractions, decimals and percentages
18	Find mean and range. Work out areas and perimeters in practical situations
19	Work out areas and perimeters in practical situations. Construct geometric diagrams, models and shapes
20	Collect and record discrete data and organise and represent information in different ways. Extract and interpret information from tables, diagrams, charts and graphs.
21-22	Mock exam
23-24	Exam
25-35	Revision, exams and mop up

Appendix 2: Guide to Ethical Issues and Action Research Questions for Review and Reflection (Zeni 1998)

Questions for review and reflection used from Zeni (1998). Responses to these questions were carried out on 19th October 2017 before the research for this study were carried out in line with BERA (2011) guidelines.

Part I: Overview

1. Briefly describe the project as you see it today

   [redacted], a further education centre, are encouraging staff to embed Maths and English "key themes" for the academic year 2017-18 in attempt to improve functional skills exam results. This study aims to reflect on the implemented strategy by comparing student's examination results to previous years. The study also looks to gather quantitative and qualitative data from students, staff and senior management on its success through feedback and recommendations for improvement. Evidence would be served to track student success, show staff good practice and the value in such an approach to form part of the college's quality improvement plan (QIP) and self-assessment report (SAR).

2. What is the time frame of your project? Is it a one-short enterprise or does it involve several cycles? Have you already done a pilot study?

   The time frame of the project is two-years. There will be no pilot study and project will aim to have completed the following phases:

   - Context problem – exploring pedagogy and educational issues (key themes embedding) behind the research problem. Deadline: December 2017.
   - Literature review – reading and identifying relevant research areas and different points of view. Deadline: January 2018.
   - Methodology – ensure choice of quantitative and qualitative research methods aligns with research problem. Deadline: February 2018.

- Data analysis and emerging themes – identify categories within data and triangulate quantitative and qualitative findings. Deadline: March/April 2018.
- Discussion of themes and findings – link to literature review and discussion of themes. Deadline: May 2018.
- Conclusion and recommendations – link to literature review and contribution to knowledge. Deadline: June 2018.
- Summary of research findings and implications to a wider audience. Deadline: July 2018.
- Submission of thesis. Deadline: January 2019.

3. What problem does your research address? What (initial) action will you take? What do you hope to accomplish?

   Matthews (2009) argues that it falls on the shoulders of senior management and leadership teams, who carry out lesson observations, to connect and engage best practice through strategic recommendation and intervention. There is a growing number of further education colleges who utilise vocational tutors for the delivery of maths and English, and there are those who have shared their doubts: - "*You wouldn't expect a plasterer to go and teach Maths and English, and you wouldn't expect a maths teacher to teach plastering*". The same research showed the need for tutors to take ownership of maths and English delivery (Casey et al. 2006) rather than treating them as if they were 'bolted on' to main study programmes. With Ofsted increasing provision in Maths and English through strategic planning, the literature highlights the value and importance of embedding and sharing– but the term in practice can often be misunderstood and deserves careful critical examination and understanding in curriculum planning (Offord 2017).

   As this research project fits with the overall college's strategies for the next academic year regarding functional skills, staff and SMT are keen to use findings as a result of the study. With SMT support* already in place, this project will utilise the college's own data and extend pre-existing opportunities for data gathering, e.g. exam data, team meeting minutes, student voice meetings, etc. The

researcher has naturalistic access to data as an employee of the case study organisation. Following the *UK Data Service* (2017) advice and guidance, anonymisation will be used to preserve privacy and confidentiality of participants. Furthermore, data gathered from participants would be voluntary and participant information sheets will be provided, including the right to withdraw, for all those involved. Allocated time for the researcher to complete, both writing and data gathering, has been planned.

4. List the research questions as they appear at this time.

The aim of this project is to investigate the role of cross-curricular embedding of functional skills on exam results. To do this the following will be looked at in more detail:-

1. Determine how cross-curricular embedding of maths and English has been achieved in each curriculum area
2. Identify areas of strength from cross-curricular mapping that support the embedding of functional skills Maths and English
3. Carry out a comparison of functional skills Maths and English results against previous years to measure success
4. Review and reflect on strategy from staff, students and senior leadership team to establish recommendations for future improvements.

The research objectives for the project will set out to:-

- ✓ Review each curriculum areas "Functional Skills Vocational Mapping" and team meeting minutes to summarise tools/techniques used across curriculum areas
- ✓ Attain feedback from SMT on walk-throughs and corporate audit outcomes to show areas of strength/improvement
- ✓ Compare attendance of students, and spiky profiles (via ForSkills), against exam results 2017-18 with those recorded for 2016-17 and 2015-16
- ✓ Attain feedback from Student Voice meetings, questionnaires and interviews with staff/SMT to reflect on embedding of maths and English in main

programme classes (Term 1/2/3) – with opportunities to discuss SAR and QIP as appropriate.

Part II: Methods and setting

1. Are you, the researcher, also a participant in the setting where this research will take place? Specify your role.
   I am both the researcher and participant, in my role as lecturer. I taught both main vocational programmes (Level 1 to Level 3) in my subject specialist area and functional skills English within the case study organisation during academic year 2017-18. In one of the previous academic years, 2015-16, I had taught functional skills maths.

2. For this research, will you gather data on your normal educational practice and on changes in curriculum, instruction and assessment that you could make in your role (above) according to your own professional judgement? Explain briefly.
   The ME strategy used within this research underpinned the strategies used within my own classroom practice. Evidence of some good practice highlighted within the research were also used in my teaching delivery.

3. What kinds of data will you collect (e.g. field notes, taped interviews, writing samples)? Explain any changes from the way you normally document your practice. Consider how else you could get data on your question. (Can you discuss three alternatives?)
4. The data collected is planned to come from information stored on current college systems, e.g. ProMonitor, ProSolution, ProMetrix or minute meetings stored on the staff intranet. Evidence from questionnaires and interviews will be taped as necessary (with participant consents) or hand-written notes made during the interview and transcribed accordingly. Questionnaires to be sent to all teaching staff within the FE college. Interviews Interviews to be carried out with both SMT and teaching practitioners (those who do and do not directly teach functional

skills). Alternative sources of data could include reports from Corporate Audits, ForSkills and data collected on attendance from MIS. If necessary, national statistics for each of the areas could be attained and generalised accordingly.

5. What does your research aim to understand? What does your research aim to change?

   The research aims to understand how practitioners use mapping and embedding, and if this can demonstrate an impact on exam success by using a single cross college strategy. The research aims to improve my own teaching practice, shared understanding of 'good practice' in these areas, and recommend (if appropriate) its continued use to the college and to a wider audience.

Part III: 'Subjects' and subjectivity

1. Describe the individuals, groups or communities you plan at this point in the research to study. Estimate the ages of the people involved.

   This research will collect generalised data from students enrolled on functional skills for the academic cohorts of 2016-17 and 2017-18. Data will also be gathered from staff within the case study FE college including both SMT and lecturers. The student cohort varies from ages 16 to 21, staff from ages 18 to 70.

2. Analyse the power relations in this group. Which people (e.g. students, parents) do you have some power over? Which people (e.g. principals, professors) have some power over you?

   In my role as both teaching practitioner and employee, I have power over some of the students whose data will be used in the study and SMT, in their position as line manager, have power over the researcher and project.

3. What shared understandings do you have with these people? Do you have personal bonds, professional commitments? Will your research strengthen this trust or perhaps abuse it?

There are shared understandings between SMT and this research project. Permission was sought to carry out the study and there is professional commitment to complete the study in respect of college values. No conversations as to the direction of the study have occurred, and the research aims and objectives were solely designed and created by the researcher. There is no evidence to suggest that this research will strengthen or abuse trust between both parties. Data collected would be no different to data disseminated by the college at the end of the academic year to governors, parents and students.

4. Will your study attempt to read and interpret the experience of people who differ from you in race, class, gender, ethnicity, sexual orientation or other cultural dimensions? How have you prepared yourself to share the perspective of the 'other' (coursework, experiences, other sources of insight)?

   Data collected will be based on profiles of staff and students relevant to the aims and objectives of this project. All data collected will be generalised, irrelevant of the above, and any other 'sources of insight' identified would be acknowledged only if relevant to the aims and objectives.

5. Will an 'insider' review your questionnaires or teaching materials for cultural bias? Have you provided for consultation by adult members of the community? How will you reduce or correct for your misreading of populations who differ from you?

   All data collection tools designed will undergo review from programme supervisors, other academics and teaching practitioners, as part of the research towards Masters in Philosophy.

6. Does your inquiry focus on people with less power than you? Children in classrooms are always vulnerable – especially if their families have little money or education. ("Where are the ethnographies of corporate boardrooms?" asks House, 1990, p.162.) How does your project demonstrate mutual respect and justice?

The level of inquiry as part of this research will not include any direct data collection and/or observation of young people or those with less power. Data used in this research is generalised and only relevant to general exam achievement and attendance, all of which form part of public knowledge.

7. What negative or embarrassing data can you anticipate emerging from this research? Who might be harmed (personally, professionally, and financially)? What precautions have you taken to protect the participants?
   Whilst the research is not actively seeking to embarrass participants, conversations during the interview and questionnaire data collection may cause professional embarrassment if cited and quoted directly. A participant information sheet will be provided to all those involved in the data gathering process, and responses anonymised.

8. Might your research lead to knowledge of sensitive matters such as illegal activities, drug/alcohol use or sexual behaviour of participants? How do you plan to handle such information?
   The research does not seek to gather information relevant to sensitive matters. A caution for handling such information will be included in the participant information sheet.

Part IV: Risks and benefits

1. Describe the possible benefits of your research – to students, teachers or other participants; to society or to the profession.
   As this research project fits with the overall college's strategies for the next academic year regarding functional skills, staff and SMT are keen to use findings as a result of the study. Evidence would be served to track student success, show staff good practice and the value in such an approach to form part of the college's quality improvement plan (QIP) and self-assessment report (SAR). This research also has the opportunity to be presented at internal/external conferences,

journal articles and SET newsletters; and could influence both the practice and assessment of functional skills in future.

2. Describe any risks to people participating in this study. For example, will your current students be disadvantaged for the possible benefit of future students? What steps are you taking to minimise risks?

   The ME strategy used by the FE case study college was already planned for implementation prior to the research study commencing. Students, currently enrolled, are more likely to achieve an advantage of such efforts rather than disadvantage. No steps required to minimise risks.

3. Show how you will protect the people from whom you collect data through surveys, interviews or observations. For example, participants are usually considered free from risk IF:
   a) they are first informed; they must know the general nature of the study and what is expected of them;
   b) they give informed consent;
   c) they can refuse to participate and they can withdraw without penalty after beginning the research;
   d) anonymity of persons and/or confidentiality of data are protected if appropriate.

   Participant information sheets will be given to all those involved in the data collection stages to ensure they are informed of the research and the general nature of the study. Participants will be required to sign a consent form, of which all of those involved are above the age of 18. Participants will have the right to withdraw at any stage of the data collection process without penalty and the decision to maintain anonymity of all those involved will be established. General terms to describe participants such as "SMT" and "teaching practitioners" will be used when presenting results of this research.

4. Describe your method of obtaining informed consent. Who will explain the consent document to the participants? How?

As discussed above, signed participant information sheets will be collected prior to data collection. Participants will also be reminded via a three tick box checklist to confirm consent.

5. Are different kinds of consent needed at different stages in the project? For example, many teachers use two consent forms:
    a) a blanket consent to be in the study; if you regard classroom inquiry as part of your regular practice, this blanket consent form may be given to all students at the start of each year;
    b) a special consent to eventual publication; this will be needed when you prepare to publish student writing samples, taped discussions, photographs, or field notes that focus on a recognisable student.

   Data collection will be obtained and anonymised, therefore a single consent form will be used as part of the participant information sheet. This will include a voluntary informed consent in which participants understand and agree to their participation without any duress, prior to the research getting underway. Examples of student work and/or primary data of classroom inquiry will not be included in this research.

6. Do you wish to protect the anonymity of students, teachers, parents and other participants? If so, it is wise to use pseudonyms even in your field notes. If your report is eventually published, you can also interchange physical description, grade level, gender, etc., or develop composite rather than individual portraits. What are the gains and losses of anonymity?

   As a researcher who collects information, it should always seek to comply with the requirements of the Data Protection Act (1998) and the Common Law duty of confidence. To ensure identifiable personal information is reduced, researchers where possible should ensure they have consent, any personal data is kept secure and retained for no longer than reasonably necessary. However removing this information can minimise the impact of research and limit the level of scrutiny the data can be inspected. Similarly, by providing such anonymity, recognition for 'good practice' as relevant to this research can neither be rewarded nor

acknowledged. However, the reason to maintain anonymity has been sacrificed to ensure the data collected has more chances of being accurate, as participants may feel they can share more honest opinions, and scope. As part of the participant information sheet – participants will be asked how they preferred to be acknowledged, e.g. teaching practitioner, participant, SMT, management of people, etc. In line with these choices, the researcher has will not require participants' permission to disclose personal information to third parties.

7. On the other hand, instead of anonymity, it may be wiser to seek full participation and credit for students and colleagues. Research by an educator in his or her own classroom is rarely anonymous. Even if names are changed, students will be recognised in a well-written case study or classroom scene. What are the gains and losses of open acknowledgement?
   There will not be open acknowledgement used in this research or presentation of findings as part of verbal or written evidence by the author.

Part V: Ethical questions specific to 'insider' research

1. Which of the research participants at your school/college have read your proposal? Which ones have been informed of the research orally in some detail? Which ones know little or nothing of this project? Explain and justify the decisions behind your answers.
   Members of SMT at the FE case study college have read the research proposal, as part of the process in supporting its application and authorising absence for residential events. These included the college Principal and CEO, Directors of Curriculum, Head of Maths and English and my direct line manager. Staff and students at the FE college case study have not been informed or notified of the project prior to data collection, to avoid collusion and/or influence of participants.

2. What do your students know of this project? Who told them? What are the risks to them or their families of their knowing (or not knowing) what you write or collect? Explain your decisions.

Students have not been informed of this project. As an employee of the college, who teaches both main vocational subjects and functional skills, this was to avoid collusion and/or influence of participants.

3. Who else will read your field notes or dialogue with you to provide 'multiple perspectives? Lather describes "the submission of a preliminary description of the data to the scrutiny of the researched" (p.53) as an emancipatory approach to inquiry and also as a way to establish 'face validity' (p. 67). Incorporating quotes from other participants, especially when their views differ from yours, can make your work richer, more nuanced.

   The researcher will likely have on-going discussions with programme supervisors. However additional data collection studies will be explored to gather external practitioner feedback as part of the research design to give more scrutiny, depth and nuance to the research findings to avoid researcher bias.

4. You will inevitably gather more data than you 'need'. Consider why you choose to report some data to a wider audience and why you choose to keep some for your colleagues, your students or yourself. (What do you tell and what do you store?) Consider the political implications of the way you focus your story.

   Selected data will be included or discarded based on its relevance to the research aims and objectives. When presenting data, the final thesis will include areas relevant to different stakeholders such as government, SMT and teaching practitioners. Whilst information may be summarised as relevant, any material will cite and/or be referred to the thesis which will remain in the public domain. Audience interpretations of the findings may vary and cause differing opinions and inferences, or be scrutinised because of decisions and/or views on the author and their role within the organisation. Whilst these can be acknowledged and considered, political implications may or may not arise as a result of this research. There are however no plans for this research to cause grievance to any potential stakeholders and neither will the research findings or opinions of the author be otherwise considered academic appraisal and critique.

5. How will you store and catalogue your data during and after the study? (File cabinets? Computer, tapes, transcripts?) Who will have access? Should you take special precautions with your notes and other data?

   Data collected as part of this research will be stored electronically, encrypted using password protection, wherever possible or paper-based notes stored in a locked filing cabinet at the author's workplace residence. The author will be the only person with access to the data, and any files transferred electronically will be password protected.

6. Will this study evaluate your own effectiveness or a method to which you are committed? Will your findings be confirmed by observers who do not share your assumptions? How will you protect yourself from the temptation to see what you hope to see?

   The researcher will, as part of the collection and reporting of data, prepare and write researcher evaluative comments such as lessons learned, at each stage and include these within the final thesis write up. As previously mentioned, additional data collection studies will be explored to gather external practitioner feedback as part of the research design to give more scrutiny, depth and nuance to the research findings to avoid researcher bias. As part of the programme of study, reviews with academic panel members from proposal, annual review and final viva voce would be part of the review process to minimise researcher bias.

7. Who is sponsoring this research through grants, contracts, released time, course credit, etc.? Will you evaluate the sponsor's programme, textbook, method, etc.? Can you protect yourself from pressure to report favourably on the sponsors?

   This research is sponsored as part of a Practitioner Research Programme at SUNCETT, University of Sunderland Centre for Excellence in Teacher Training, and funded by the Education & Training Foundation. Funding for tuition fees towards a one year Masters of Philosophy programme and bursary, payable to employing organisation to support remission time for research, was received. The

researcher will be asked to provide feedback at the end of the programme. The researcher has not been influenced by SUNCETT or ETF to report favourably or unfavourably on the research project or asked to examine a particular research topic or area. The researcher was solely responsible for choosing the research topic, aims and objectives. If the researcher did feel that this changed at any point, a disclaimer would be included as part of the final thesis write up and discussed in further detail.

8. How do your school administrators see your work? Is action research under suspicion or is it mandated from the top in a drive for organisational quality control? Is there protection for your own thoughts, feelings, and interpretations? How safe do you feel in this institutional environment pursuing this research? Reporting what you learn to a wider audience?
   From what I can gather as a researcher, the research topic and proposal was well received by SMT and supported with confirmation on application to the programme. Action research was not under suspicion or suggested by any members of the FE case study college. The research idea was designed and reported by the researcher, who was solely responsible for choosing the research methods and study design.

9. What data will be contributed by others? Will you be recording case studies, oral histories or other stories that may be considered the property of others? How have you arranged with colleagues or other participants for:
   - credit in your manuscript?
   - publication rights?
   - royalties?
   - other recognition?

   Secondary data collection from the FE case study college will be used in this research. Much of the evidence gathered would ultimately be in the public domain by the end of the academic year. Permission to be included in this research anonymously has been granted by SMT, including the Principal and CEO. The FE

case study college would have the opportunity to publically acknowledge and recognise themselves with evidence found in this research at any stage, although the researcher would not have the same privilege. The authors own findings, interpretations and recommendations would be cited and referenced accordingly, when provided with printed final copies of the thesis.

10. If your study is collaborative, how are you negotiating authorship and ownership? University researchers, colleagues, students and parents are likely to interpret their stake in the research in quite different ways. Who owns the videotape of a classroom writing group, the dialogue journal between teacher and mentor, the transcription of talk by teacher researchers in a college seminar?

    Collaborative research of this nature will unlikely be carried out in this research. If this does arise, then any negotiations or expectations of authorship and ownership would be detailed in participant information sheets and/or as part of the study design.

11. Who is responsible for the final report? Will other stakeholders (teacher? principal? school board?) review your report in draft? Will this:

    (a) improve your accuracy?

    (b) compromise your candor?

    Participants may not agree with part or all of your interpretation. If so, you may revise your views; quote their objections and tell why you maintain your original view; or invite them to state alternative views in an appendix. The final report will be the responsibility of the author – with expected feedback to be limited to programme supervisors and/or panel of academics as part of the programme of study. SMT will be provided with printed final copies of the thesis.

12. Have you decided on anonymity or on full acknowledgement if your study is eventually published? Perhaps you will identify teachers, but use pseudonyms for students. How and when have you negotiated these issues?

Permission to be included in this research anonymously has been granted by SMT as part of the research application process. The FE case study college would have the opportunity to publically acknowledge and recognise themselves with evidence found in this research at any stage, although the researcher would not have the same privilege. Participants at no stage will be identified and/or acknowledged as part of this research.

Part VI: The Golden Rule

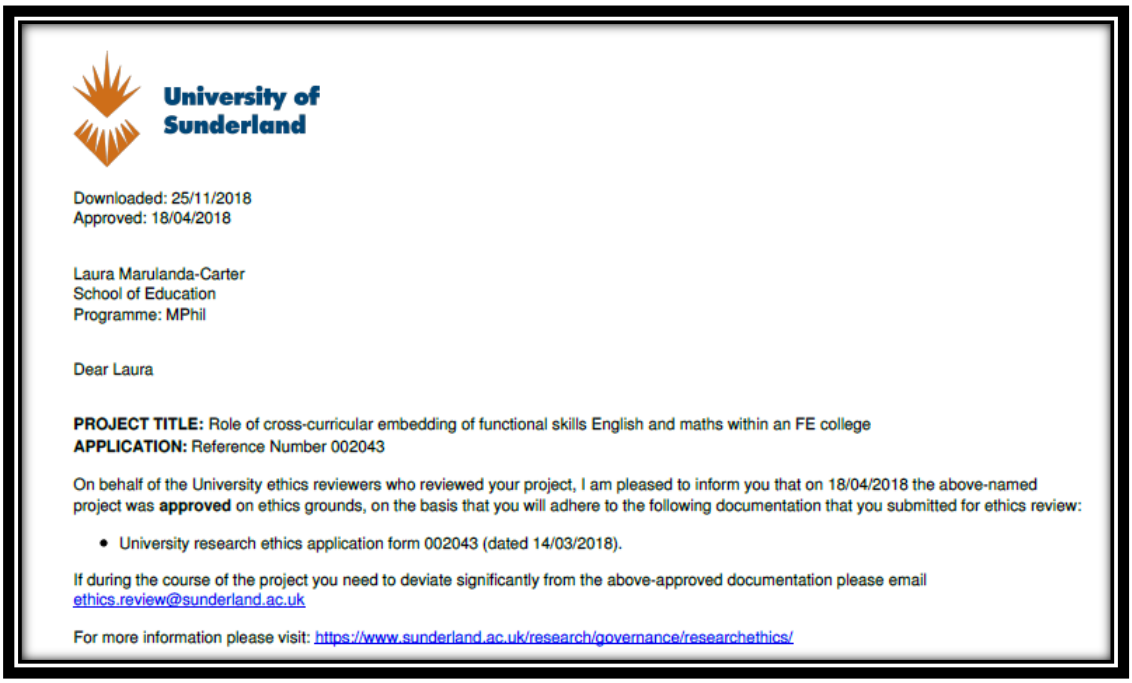
1. What are the likely consequences of this research? How well do they fit with my own values and priorities?

   If successful, this research would ultimately lead to the qualification of Masters in Philosophy. As a teaching practitioner and academic this fits my own values to maintain my skills set in academic research alongside my current job role, and priorities to enhance my own curriculum vitae and continued professional development.

2. If I were a participant, would I want this research to be done? What changes might I want to make me feel comfortable?

   If I was a participant, I would want this research to be done as a means to showcase the efforts and good practice carried out daily within mine, and my colleagues, job role. I would want to withdraw my right to anonymity and be publically acknowledged for these efforts; although I would not want to be publically shamed for the same reasons and would ultimately accept anonymity in my involvement in this research. No other requirements to make me feel more comfortable.

Appendix 3: Ethical Clearance Endorsement and Consent Form



University of Sunderland

Downloaded: 25/11/2018
Approved: 18/04/2018

Laura Marulanda-Carter
School of Education
Programme: MPhil

Dear Laura

PROJECT TITLE: Role of cross-curricular embedding of functional skills English and maths within an FE college
APPLICATION: Reference Number 002043

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 18/04/2018 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 002043 (dated 14/03/2018).

If during the course of the project you need to deviate significantly from the above-approved documentation please email ethics.review@sunderland.ac.uk

For more information please visit: https://www.sunderland.ac.uk/research/governance/researchethics/

PARTICIPATION CONSENT FORM

Study title: Investigation into the role of cross-curricular embedding of functional skills Maths and English within an FE college

- I am over the age of 18.
- I have read and understood the attached study information and, by signing below, I consent to participate in this study.
- I understand that I have the right to withdraw from the study without giving a reason at any time during the study itself.
- I understand that I also have the right to change my mind about participating in the study for a short period after the study has concluded, i.e., 2 weeks after completing the questionnaire and/or interview.

☐ Please tick to show you have read the Project Information Sheet and accept that you agree to participate in this study without any duress or incentive. A participant code will be issued on completion of your questionnaire and/or interview.

Appendix 4: Interview Framework

PROJECT INFORMATION SHEET

Study Title: Investigation into the role of cross-curricular embedding of functional skills Maths and English within an FE college

What is the purpose of the study?

In light of the growing public concern for achievement in Maths and English, and utilising the FE case study organisation, the research aims to investigate the role of cross-curricular embedding of functional skills Maths and English within an FE college. The objectives of the research were twofold. Firstly, to work and improve college-specific policy and provisions in relation to functional skills. Finally exploring the wider policy implications and improvements as a result of the findings.

Who can take part in the study?

Staff within the selected FE college have been asked to take part in a college-wide questionnaire. Functional skills tutors and members of the senior leadership team have been asked to take part in a short interview.

Do I have to take part?

Participation is entirely voluntary and anonymous. If you change your mind about taking part in the study, **you can withdraw at any point during the questionnaire and/or interview without giving a reason and without penalty**. After you have completed the study, you can also withdraw your consent for your data to be included by contacting me via email **within 2 weeks of participation** and providing me with your participant code. The participant code will be given to you after you have consented to take part in the study. If you decide to withdraw during the study or in the subsequent 2 week period, your data will be destroyed and will not be used in the study.

What will happen to me if I take part?

Results from the questionnaire and/or interview will be anonymised and used as part of the research findings. In some cases, direct quotes may be extracted. Generic group names will be used to identify subject-areas, e.g. 'Construction and Engineering', 'Business' and 'ICT', and staff members will be asked how they would like to be addressed in the research at the end of the questionnaire and/or interview, e.g. staff member, tutor, course team leader or member of SMT.

What are the possible disadvantages and risks of taking part?

There are no foreseen disadvantages or risks to you by your participation in this study.

What are the possible benefits of taking part?

Staff will be given the opportunity to share good practice and feedback. This will be disseminated on completion and can be used as a resource for staff in future planning and delivery of functional skills or embedding within your teaching.

What if something goes wrong?

If you change your mind about participation, please contact me by email to cancel your participation. If you feel unhappy after the study, please contact me immediately or the Chairperson of the University of Sunderland Research Ethics Committee, whose contact details are given below.

Will my taking part in this study be kept confidential?

Every effort has been made to maintain anonymity of all research participants. Data will be anonymised and generalised for the purposes of this research.

What will happen to the results of the research study?

Participants should be aware that their responses are being monitored and analysed for research. It should be acknowledged that findings will be referenced to this study and subsequently may be cited in relevant future publications by other academics or

journalists both printed and online. If suitable, the results may also be presented at academic conferences and/or written up for publication in peer reviewed academic journals in line with the BERA research writing guidelines: Good Practice on Educational Research Writing. A summary of findings will be disseminated within your organisation no later than 1st January 2019.

Who is organising and funding the research?

This research is sponsored as part of a Practitioner Research Programme at SUNCETT, University of Sunderland Centre for Excellence in Teacher Training, and funded by the Education & Training Foundation. The researcher has not been influenced by SUNCETT or ETF to report favourably or unfavourably on the research project or asked to examine a particular research topic or area. The researcher was solely responsible for choosing the research topic, aims and objectives.

Who has reviewed the study?

The University of Sunderland Research Ethics Committee has reviewed and approved the study.

Contact for further information

Dr Laura Marulanda-Carter

Email: laura.marulanda-carter@research.sunderland.ac.uk

INTERVIEW FRAMEWORK

In your own opinion, can you describe the functional skills provision within [FE college name / department] prior to this year?

Have you made any changes this year? If yes, were these part of your SAR targets?

During learning walks of functional skills, what good practice have you seen this year?

During learning walks of vocational main study programmes, what good practice have you seen this year?

What are your expectations of teaching staff in relation to Maths and English?

Moving forward, what would you expect to do the same / different next year?

Are you expecting to achieve more or less this year in terms of student achievement in functional skills?

Data collected will be anonymised within the research findings. If quotes are used from these results, how would you like to be referred? (Please tick only one)

- Vocational Tutor
- Functional Skills Tutor
- Dual (vocational and functional skills) Tutor
- ALS/ILS Support
- Member of Senior Management Team
- Other/Staff Member at FE College

Adapted from:
https://www.researchgate.net/profile/Stephen_Ball6/publication/232903869_Life_in_the_Pressure_Cooker_-_School_League_Tables_and_English_and_Mathematics_Teachers%27_Responses_to_Accountability_in_a_Results-Driven_Era/links/5728753508ae262228b6d23c.pdf

Appendix 5: ME Questionnaire

PROJECT INFORMATION SHEET

Study Title: Investigation into the role of cross-curricular embedding of functional skills Maths and English within an FE college

What is the purpose of the study?

In light of the growing public concern for achievement in Maths and English, and utilising the FE case study organisation, the research aims to investigate the role of cross-curricular embedding of functional skills Maths and English within an FE college. The objectives of the research were twofold. Firstly, to work and improve college-specific policy and provisions in relation to functional skills. Finally exploring the wider policy implications and improvements as a result of the findings.

Who can take part in the study?

Staff within the selected FE college have been asked to take part in a college-wide questionnaire. Functional skills tutors and members of the senior leadership team have been asked to take part in a short interview.

Do I have to take part?

Participation is entirely voluntary and anonymous. If you change your mind about taking part in the study, **you can withdraw at any point during the questionnaire and/or interview without giving a reason and without penalty**. After you have completed the study, you can also withdraw your consent for your data to be included by contacting me via email **within 2 weeks of participation** and providing me with your participant code. The participant code will be given to you after you have consented to take part in the study. If you decide to withdraw during the study or in the subsequent 2 week period, your data will be destroyed and will not be used in the study.

What will happen to me if I take part?

Results from the questionnaire and/or interview will be anonymised and used as part of the research findings. In some cases, direct quotes may be extracted. Generic group names will be used to identify subject-areas, e.g. 'Construction and Engineering', 'Business' and 'ICT', and staff members will be asked how they would like to be addressed in the research at the end of the questionnaire and/or interview, e.g. staff member, tutor, course team leader or member of SMT.

What are the possible disadvantages and risks of taking part?

There are no foreseen disadvantages or risks to you by your participation in this study.

What are the possible benefits of taking part?

Staff will be given the opportunity to share good practice and feedback. This will be disseminated on completion and can be used as a resource for staff in future planning and delivery of functional skills or embedding within your teaching.

What if something goes wrong?

If you change your mind about participation, please contact me by email to cancel your participation. If you feel unhappy after the study, please contact me immediately or the Chairperson of the University of Sunderland Research Ethics Committee, whose contact details are given below.

Will my taking part in this study be kept confidential?

Every effort has been made to maintain anonymity of all research participants. Data will be anonymised and generalised for the purposes of this research.

What will happen to the results of the research study?

Participants should be aware that their responses are being monitored and analysed for research. It should be acknowledged that findings will be referenced to this study and subsequently may be cited in relevant future publications by other academics or

journalists both printed and online. If suitable, the results may also be presented at academic conferences and/or written up for publication in peer reviewed academic journals in line with the BERA research writing guidelines: Good Practice on Educational Research Writing. A summary of findings will be disseminated within your organisation no later than 1st January 2019.

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Who has reviewed the study?

The University of Sunderland Research Ethics Committee has reviewed and approved the study.

Contact for further information

Dr Laura Marulanda-Carter

Email: laura.marulanda-carter@research.sunderland.ac.uk

ME QUESTIONNAIRE

In previous academic years, have you taught functional skills?

 Yes No

In your current role (academic year 2017-18 only), which of the following have you been involved with? (Tick all that apply)

 Main vocational subject teaching/assessing

 Functional skills (English)

 Functional skills (Maths)

 LRC Workshops and/or Revision

At the start of this academic year, vocational tutors were asked to complete "vocational skills mapping" documents to plan the embedding of functional skills according to themes. Are you familiar with this activity?

 Yes No

(If yes) Have you...

i. Felt supported in writing and/or inputting to the vocational skills mapping

Strongly Agree **Agree** **Neutral** **Disagree** **Strongly Disagree**

ii. Found this helpful as a reminder of what you had planned during lessons

Strongly Agree **Agree** **Neutral** **Disagree** **Strongly Disagree**

iii. Improved your teaching practice than what you had done in previous years

Strongly Agree **Agree** **Neutral** **Disagree** **Strongly Disagree**

In addition to vocational skills mapping, have you implemented other strategies to promote functional skills in your teaching?

……

……

……

…….

Rate the importance of functional skills when: -

(1 = low importance and 6 = high importance)

a) Planning	**1**	**2**	**3**	**4**	**5**	**6**	**N/A**
b) Teaching	**1**	**2**	**3**	**4**	**5**	**6**	**N/A**
c) Setting targets	**1**	**2**	**3**	**4**	**5**	**6**	**N/A**
d) Motivating students	**1**	**2**	**3**	**4**	**5**	**6**	**N/A**

In class, and when interacting with students, how do they respond to the strategies you use around functional skills?

……

……

……

…….

Can you identify any barriers that might prevent you using the vocational skills mapping and/or embedding functional skills within your teaching?

……

……

……

Share one way you have included functional skills within your main study programme this year.

……

……

……

…….

Data collected will be anonymised within the research findings. If quotes are used from these results, how would you like to be referred? (Please tick only one)

- ☐ Vocational Tutor
- ☐ Functional Skills Tutor
- ☐ Dual (vocational and functional skills) Tutor
- ☐ ALS/ILS Support
- ☐ Member of Senior Management Team
- ☐ Other/Staff Member at FE College

Thank you for taking part in this questionnaire!

Your participant number is: [ ]

Adapted from:
https://kuscholarworks.ku.edu/bitstream/handle/1808/6198/SD8_National%20Survey%20of%20Teachers'.pdf?sequence=1&isAllowed=y

Appendix 6: Example of Functional Skills Placemats

This week's theme is… Nouns, Adjectives, Plurals & Alphabetical Ordering

Name:

Learning Outcomes

I will learn today

…….

…….

…….

…….

Starter Activity: The Name Game

Think of an adjective starting with the same letter as your first name, e.g. Amazing Alicia, Smart Simon.

Share with your peers. How many can you learn by the end of the lesson?

ForSkills® For lifelong achievement

Why do I need this?

This will support your understanding of sentence structure for report writing.

What other documents will you be expected to write at work?

Task: A-B-C

In pairs, using the flashcards, complete the activities :-

1. Beginning ABC Order
2. Two-letter Sorting
3. Find the Letter
4. Multiple-Letter Sort

Still need help?

LRC offer 1:1 workshops. Book yourself in!

Key Terms

Noun: a person, place or thing

Adjective: a word that tells us more about a noun

Plural: a word that is used to denote more than one

EXAM-STYLE QUESTION: Circle the nouns, adjectives and plural words from the passage.

Multi Use Games Areas; known as MUGAs, are being brought to parts of London to combat the problems of youth crime and gang violence. In essence they are fenced sports areas, they have no set size, but come in a range of shapes to suit individual sites. They comprise a high mesh fenced enclosure, floodlights, green astro-turf surface and a goal area that can be used for football, hockey, basketball or netball.

MUGAs are not just to be found in London. In a small rural area many miles away, two Wear Valley teenagers were recently hailed as the "stars of the show" as they opened a £60,000 MUGA for which they had secured funding. Nicky 17, and Scott 18, cut the red ribbon to the gates of the MUGA at a village fun day, planned by the local Police and the Parish Council.

What did I do well?

……

……

……

What do I need to practice?

……

……

……

What is your partner's name?

……

……

Interactive Game

Download on your phone or log-in via computer to the website Kahoot! You will be given a PIN to play.

Homework

Next week's theme is… Verbs & Tense