The effects of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment.

Thesis submitted for the degree of

Doctor of Education

At the University of Leicester

By

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2018

Abstract

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The effect of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment.

The competitive market which FE finds itself has led to a more corporate form of management which results in the need to focus on the performativity of the teachers. This often takes the form of monitoring and accountability measures to ensure that targets are met, which are generally concentrated towards student attainment rather than the grades that they achieve. However, the findings of this study suggests that performativity measures applied to the FE sector can have an adverse effect on the quality of the learning experience for those studying on the HE in FE programmes. Using the methodological approach of Action Research and Appreciative Inquiry I endeavoured to develop a pedagogic approach that could create a positive change that gives the students the opportunity to achieve to their full potential in the HE in FE environment. An Emergent Learning and Teaching (ELT) model was developed during this study based on data obtained from the experiences of a group of HE students. It incorporates Kolb's ELC, Vygotsky's ZPD and Deep and Surface Learning. The study identified that the reduction in guided learning hours restricted the time for the students to assimilate information and reflect. However, to increase the number or length of the lessons would effectively raise the cost of running the programmes, so a more imaginative approach was required. A 'slowing down to speed up' approach was incorporated in which a topic's fundamentals were taught in a slow and purposeful manner, allowing the students time to grasp the core principles before the pace of the lessons sped up. New innovative approaches to assessment and feedback were introduced that proved to be very effective. The participants responded positively to the changes in pedagogic practice in the HE in FE classroom and recognised the potential for a deeper learning experience.

Key words: HE in FE; performativity; Time; ELT model; Pedagogic Practice

Acknowledgements

I would like to thank my supervisor, Dr Phil Wood, for his guidance, support, encouragement and belief in me. This thesis would not have been completed without him. I would also like to extend such sentiments to Dr Joan Woodhouse too. I also wish to express my thanks to my internal examiner, Dr Colin Foster, and my external examiner, Dr Denis Feather (University of Huddersfield), for their invaluable feedback during my viva voce.

Many thanks go to all the participants who took part in my study, offering their valuable time and the honesty of opinions to ensure that the results of the actions trialed gave a rich source of data that was relevant and valid.

My sincere gratitude goes to Dr Jalpa Ruparelia, who has studied alongside me, offering support, advice and a critical perspective to discuss ideas and concepts. And finally, to Karin Payne for her support and the sacrifices made to allow me the time and the space to pursue this amazing journey.

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Abbreviations

AARM   Appreciative Action Research Model

AI   Appreciative Inquiry

AR   Action Research

BTEC   Business and Technology Council

CAD   Computer-Aided Design

CPD   Continuous Professional Development

ECP   Emergent Constructivist Paradigm

ELC   Experiential Learning Cycle

ELT   Emergent Learning and Teaching

FE   Further Education

GCSE   General Certificate of Secondary Education

GLH   Guided Learning Hours

HE   Higher Education

HEFCE   Higher Education Funding Council for England

HEIs   Higher Education Institutions

HNC   Higher National Certificate (level 4 qualification)

HND   Higher National Diploma (level 5 qualification)

ITT   Initial Teacher Training

QA   Quality Assurance

ZPD   Zone of Proximal Development

CHAPTER 1

Introduction

> The FE college is the neglected 'middle child' between universities
> and schools. As FE colleges offer major opportunities for the
> economy and individual citizens, central government should bring
> together the policies and operations of several departments of state,
> ensuring coherence and synergy.
>
> (Foster, 2005: 48)

<u>Background to the study</u>

The Further Education (FE) sector is a complex one, offering a provision which is rich in its diversity, satisfying the needs of individuals, communities, business demands and government policy (Foster, 2005). FE links education and skills for people of all ages and attracts students from a broad range of cultural and ethnic backgrounds (Frumkin 2008). FE has embraced the commitment to widening participation recommended in the Kennedy report (1997), opening learning opportunities to the more disadvantaged, hard-to-reach students and those who need to develop their basic skills in literacy and numeracy. Therefore, the diversity of students makes it a challenge for FE teachers to ensure that they are able to help all students learn and reach their potential.

Since the formation of a Labour government in 1997, FE in England has been subject to an endless stream of policies and initiatives ranging from widening participation (Kennedy, 1997), reforms in 14-19 curriculum (Tomlinson, 2004), to changes in funding (Wolf, 2011). During this time, the sector has developed into one that is governed in a more neoliberal manner, and as a result is in competition with other post-16 educational and training organisations (Howard, 2009). With such a marketised sector comes a more corporate form of management focused towards monitoring and accountability measures to provide evidence of teachers' performance to ensure value for money (Green, 2013).

The importance of the research

From a pedagogical perspective, assessment, and particularly summative assessment, has now turned into the primary focus of the curriculum in FE, with learning (and particularly the quality of learning) becoming subordinate to it. Therefore, with FE becoming more attuned to seeing summative results as of sole importance, any monitoring and accountability measures that are applied to teachers tend not to focus on pedagogy but on student achievement. In my role as a teacher, I am often unable to develop students' deeper learning and knowledge of a subject due to time constraints, but I make certain that I am able to transfer enough information of a topic to ensure that the qualification criteria are met. As a result, and certainly in line with my experience as a teacher in the sector for many years, it could be argued that students are achieving more in terms of qualifications (which is what educational institutions are nationally measured against) but learning less regarding their depth of knowledge and understanding of the topics being taught (Ecclestone, 2007).

The amount of time given to teach a programme is more reliant on cost than pedagogical need, so does not necessarily take account of the amount of content, complexity or difficulty of the topics being taught. This can leave teachers in a moral dilemma. Do they only teach enough of the curriculum material to allow the students to achieve the assessment requirements, which restricts the opportunity for the students to develop their knowledge and understanding further? Or should teachers spend more time on the topics to allow for more comprehension and a richer learning experience, but run the risk of being unable to complete the full programme within the allotted time period?

Teachers are pivotal to the education of the students. Policymakers recognise that teachers are the final link in the policy chain and are ultimately responsible and influential in implementing change in the students' learning experience (Edward et al., 2007). However, viewed from another perspective, teachers can be seen as victims – obligated to change their own practices and approaches in order to implement policies applied from above, regardless of their professional judgement of how the students' learning could be impacted (Edward et al., 2007).

It is important to recognise that the FE sector is unique in offering a wider range of educational and training programmes than that of schools and Universities (Salisbury et al., 2009). FE attracts a broad range of students, especially since the introduction of the 'Widening Participation scheme' in response to the Kennedy Report (Kennedy, 1997), recognising poor participation of minority groups in FE. Often students that choose to study at FE colleges include those who are unfocused, lack confidence and are burdened with difficult home lives (Edward et al., 2007). There is also considerable evidence that unlike sixth-form colleges, the FE sector attracts a significant number of their students from lower socio-economic groups – see the works of Howard (2009), with the majority of those being of working class, low-achieving or disadvantaged groups (Fletcher and Perry, 2008). Indeed, a strength of FE is that it provides a second chance to those people who have been failed by compulsory education, had dropped out of education for a variety of reasons, or were simply not given the opportunity to participate (Foster, 2005).

HE in FE provides an opportunity for those people who would not normally progress onto higher level qualifications through the more traditional route of GCSEs, A Levels and then university (Aldous, 2014). A common profile of the students that are often on HE programmes in an FE context includes those who are over 25 years of age, studying part-time (one day per week or a day and an evening) whilst in full-time employment, and are often from areas with a historically low participation rate in HE (HEFCE, 2006). I, as a teacher in FE, along with my colleagues, am very experienced at teaching cohorts with a broad range of abilities, backgrounds and experiences so can apply similar approaches with HE students and support them through their studies to help them learn (Parry et al., 2012; McAndrew, 2010). Our experiences of teaching such a broad range of students and supporting them within a steadily increasing environment of performativity measures puts us in a strong position to be able to adapt when teaching HE in FE.

I have been teaching in the FE sector for over 18 years with the responsibilities of full-time teacher (HE and FE) and Programme Lead (for HE), in which I manage the design, unit selection and teaching of Higher Education (HE) programmes. I have also held the position of Advanced Practitioner where my role involved the training, mentoring and updating of skills for teaching staff across all curriculum areas of the

college. I am also actively involved with a Post Compulsory Initial Teacher Training (ITT) programme both as a teacher trainer and as a mentor. I teach at an FE college in the East Midlands where my duties are primarily based in the curriculum area of Engineering and Technology, which currently has over 1200 students aged from 14 years upwards, enrolled on over 40 courses ranging from level 1 (equivalent to GCSE, grades 3-1) up to level 5 (equivalent to foundation degree).

<u>Identification of the research problem to be addressed</u>

During my time teaching in the FE sector, the culture of monitoring and accountability has become ever more prevalent. The increased importance of data collection including student retention, achievement rates, quality of feedback, and lesson observations are all being used as a measure of lecturer performance (Edgington, 2013; Jephcote et al., 2008). The programme leads are expected to run their courses as cost effectively as possible (Apple, 2005). Larger class sizes is one solution, although such an approach is restricted by the seating capacity of the classrooms and the availability of specialist resources and equipment. However, an approach commonly used in the FE sector, which also applies to HE in FE, is to restrict the guided learning hours (GLH) recommended by the awarding body, which is the time the teacher is expected to spend with the students (such as lessons, labs, tutorials etc). In the case of the HNC programme that is the focus of this research, the recommendation is 60 GLH for each unit. In reality, only 24 GLH is given for all units with the exception of a maths unit (which is core to any engineering programme) which is 40. Therefore, students are expected to engage in more self-study to compensate for the difference. Such cost cutting measures ultimately impact on teachers' pedagogic approach in the classroom, due to the fact there is less time available to teach the topics/subjects. As a consequence, I am often unable to dedicate as much time as would be ideal to the topics to give enough information for the students to develop a deep learning and understanding.

This creates a paradox – the policymakers want to see evidence of student achievement and higher grades following a more rigorous assessment and testing regime (BIS, 2013). This can only be achieved by the pedagogic approaches being implemented by teachers to encourage learning. However, within the performativity constraints that the teachers work, the students may be unable to achieve to their full

potential because they have not had the time in the classroom to develop their depth of subject knowledge.

<u>The aims of the study and research questions</u>

The aim of this study is to identify the effects of marketisation on pedagogic practice in the HE in FE classroom and explore ways of creating a positive change in the environment. Consequently, the research questions which will be used to focus the study are:

1. What kind of methodological design/approach would be best used to investigate a complex environment such as the HE (in an FE context) classroom?
2. How do teachers experience monitoring and accountability when teaching HE (in an FE context) and what has that meant for learning teaching and assessment?
3. Can different teaching and assessment approaches be applied to create a positive change in the HE in FE environment?
4. Can a revised pedagogic approach be developed to encourage deeper learning and understanding of topics in the HE (in an FE context) classroom?
5. What is the impact of a revised approach to pedagogy on student learning when teaching HE (in an FE context)?

<u>Overview of the chapters</u>

An overview of the contents of the subsequent chapters now follows:

<u>Chapter 2</u>

In this chapter I introduce the context of the study before conducting research into the FE sector. I identify what its role is in the educational system, and the effects of the marketisation of the sector, in which competition is the norm and, as a result, creates a focus on student achievement rather than attainment. The performativity measures that are imposed as part of such a marketised sector are then placed into focus, showing that a high-pressure environment is created where teachers are required to focus on statistical data and targets, efficiency and effectiveness, rather than the quality of the learning and teaching. The responsibility for achieving such objectives is generally that of the teachers who, as a consequence, are both

monitored in their duties and accountable for the outcomes of their actions. Before demonstrating how the marketisation of the sector and performativity measures are key elements that drive managerialism, I explain how a version of neo-liberalism led to such a management concept.

I suggest that by imposing measures that affect the amount of and/or the teaching of subjects can result in a narrowing of the curriculum and a restriction to the opportunities for students to achieve a deep understanding of topics. This is likened to Freire's (1972) banking system concept. Justifying the need for such monitoring and accountability measures to ensure a good quality of provision is maintained, is what Foucault (1980) would consider to be a 'regime of truth'. Thus, teachers are forced to comply with the accountability measures, because they are informed that such measures lead to a better quality of provision, which I argue is not the case. I then examine the literature to identify the differences between teaching HE in an FE context and teaching HE in a university, and how FE practises/traditions can impact the HE classroom.

Consideration is then given to what effective pedagogic practice actually means, which leads into learning and teaching approaches that could be suited for HE programmes delivered in FE. Three such approaches were chosen for further research which encourage a social constructivist learning environment; Kolb's Experiential Learning Cycle (ELC), Vygotsky's Zone of Proximal Development (ZPD) and Deep and Surface learning. The knowledge acquired from the literature review became the foundation for my study.

Chapter 3

In this chapter, I discuss the research design for the study, reiterate its aims and the research questions that I developed to achieve the aims. The case for choosing an interpretivist stance for the study is made and justified as I was researching potential consequences of real events and phenomena. The research paradigm of pragmatism is explained and reveals that it can reduce the dualism between conceptually opposed positions (Morgan, 2014). As a result, pragmatism underpins the ontological metaphysical position of realist and idealist. In anticipation of the changes in direction that are likely to occur in terms of the nature and understanding of the knowledge that results from an emergent process, an epistemological stance

of pragmatism was adopted. Using an epistemological stance of pragmatism allows me to conduct research that leads to practical consequences (Gray, 2014; Howell, 2013).

Reflecting on the most appropriate methodological approaches that were suitable to investigate a complex environment such as the HE in FE classroom, I identified Action Research (AR) and Appreciative Inquiry (AI) as two similar approaches that complement each other. A research design model is developed called 'The Appreciative Action Research Model' (AARM) that incorporated both methodological approaches selected earlier.

Chapter 4

In this chapter, I clarify how the pilot study, which was conducted separately, acted as the baseline to inform the main study. I then show how the AARM was applied to the study to manage the process of data collection, the analysis undertaken, the decisions made from the results, and the appropriate actions taken to achieve the desired outcomes. The 'Discovery' and 'Dream' phases of the AARM were used to collect data from teachers and students based on their experiences of the learning and teaching approaches developed from the baseline. The actions that were carried out for the 'Design' stage of the AARM created improvements in the learning and teaching experience which ultimately led to a more positive experience in the HE classroom ('Destiny').

Chapter 5

In this chapter I reiterate the purpose of the study, which was to research the effects of marketisation on pedagogic practice in the HE in FE classroom and create a positive change within that environment. The key findings and the issues related for each of the research questions are discussed and linked where appropriate to the literature reviewed in chapter 2. The findings show that changes made during the study did make a positive change to pedagogic practice in the HE classroom, regardless of the constraints placed on teachers as a result of performativity measures, such as monitoring and accountability. This was due to the revised approach to learning, teaching and assessment methods that were the result of the ELT model which was developed over the course of the study.

The research design and process is reviewed reflecting upon the strengths and limitations. Recommendations are given on how the model could be implemented across disciplines in the HE in FE context and also the wider FE classroom. I suggest areas for further research into the effects that the FE sector has on HE programmes. Finally, I summarise how I believe the study has made an original contribution to knowledge. I emphasise an important finding that came from this study – time is a very important element of the learning and teaching experience. If the students do not have time to assimilate the amount of information that they are given by the teacher in the classroom and reflect upon it, they may never be able to fully construct their knowledge and understanding. Also, if information is being given to the students at too fast a pace, once again there is not enough time to process the information and construct knowledge.

CHAPTER 2

Literature Review

In this chapter I have targeted those areas which can help begin to address the research questions. It begins with a background to the FE sector, what it is and what it offers. The effects the marketisation of the sector and the performativity agenda, which creates a culture of monitoring and accountability are then discussed and how they manifest themselves in the corporate approach of managerialism. The possible consequences of such a regime is reviewed by looking at Freire's (1972) educational banking system. The emphasis then shifts to teaching HE programmes in an FE context and the important elements that need to be reflected upon to build a pedagogy which works well within an HE context. Social Constructivism is introduced before focusing on three learning approaches that have the potential to work well within the HE in FE classroom. They are: Kolb's Emergent Learning Cycle (ELC) – which is commonly used in FE, especially with practical tasks, Vygotsky's Zone of Proximal Development (ZPD) and Deep and Surface learning, and I attempt to synthesise them into a single model to help develop my research and address the focus of the study.

2.1 The FE sector

FE is a multifaceted sector that offers education for people of all ages and attracts students from a broad range of cultural and ethnic backgrounds (Frumkin et al., 2008). Along with its responsibility for individuals, it also satisfies the needs of communities, the demands of business and government policy (Foster, 2005). By offering learning opportunities to the disadvantaged, hard-to-reach, and to students who also need to develop their basic literacy and numeracy skills, FE shows its commitment to the widening participation agenda (Kennedy, 1997). Therefore, it is apparent that teachers face the possibility of many challenges to ensure that learning takes place with all students in a class.

According to James and Biesta (2007), over 300 documents have been produced to address government policy concerning the need for improvement of learning and teaching in the FE sector since the Second World War. These documents have included changes in policy, academic papers and research reports, however, very

few have offered solutions or strategies on how pedagogic improvement to the sector can be achieved (James and Biesta, 2007). This could in part be due to the huge diversity in FE and the different contextually driven pedagogies that are used in different areas. It also illustrates how difficult a task it is to address how pedagogy may be implemented in the HE in FE classroom.

The arrival of a Labour government in 1997 brought with it a new and increased focus on education, with a particular emphasis on FE. Large numbers of policies and initiatives introduced to the sector since the change of government have not necessarily replaced existing ones, but meshed with, or been layered on top of older developments (Foster, 2005). This has made FE a very complex and opaque system, compared to European and international standards, and it could be argued that a review of the policies and a simplification would bring benefits (Wolf, 2011). The perceived inadequacies and shortcomings of the FE sector were highlighted in reviews including Kennedy (1997), Tomlinson (2004), Wolf (2011) and Lingfield (2012). The key policies, initiatives and qualifications that have been applied to the sector since the arrival of the Labour Government can be seen in figure 2.1.

figure 2.1 – 15 years of new policies, initiatives and qualifications in FE based on (Lingfield, 2012)

Year	Reports, policies, initiatives and qualifications
1997	Kennedy Report Introduction of the Widening Participation Scheme
1999	Moser Report Targets for achievement of literacy & numeracy
2000	Curriculum 2000 Introduction of AS/A2 & AVCE qualifications
2000	Learning & Skills Act introduced
2000	Learning & Skills Council formed
2001	Introduction of mandatory qualification for FE teachers
2001	Introduction of New Deal – qualifications for long term unemployed
2001	Offenders' Learning & Skills Unit (OLSU) formed
2002	Green Paper – 14-19 Extending Opportunities: Raising Standards (DfES)
2003	Green Paper – Every Child Matters The 2004 Children Act
2004	Tomlinson Report Reforms in 14-19 curriculum

2005	Foster Review A review of the future role of FE colleges
2006	White Paper – FE raising skills, improving life chances
2006	Leitch Report Personalising FE: Developing a vision for the future (DfES)
2006	2020 Vision: Report of the Teaching & Learning in 2020 Review Group
2007	World Class skills: Implementing the Leitch review of skills in England
2007	ITT reforms Introduction of CPD requirements and QTLS/ ATLS qualifications
2008	Education & Skills Bill
2008	Introduction of new Diplomas
2010	New government - FE faced with 30% cuts with under 16s vocational programmes under threat
2011	Wolf Report Review of vocational education. Change funding to per student rather than per qualification
2012	Downgrading of new Diplomas
2012	Lingfield Report Removal of mandatory acquisition of teaching qualification

The focus on education and particularly on FE by the new Labour government, also increased the drive for marketisation of the sector which had gained some momentum a few years prior.

2.2 The marketisation of FE

The 1992 Further and Higher Education Act ended regionally allocated funding from local authorities, which was based on predicted enrolment numbers for programmes. Instead, a more neo-liberal system of funding was introduced that claimed to be better value for money for the tax payer and based on the 3 Es of good management – economy, effectiveness and efficiency (Hoyle and Wallace, 2007). As a result, the act made FE colleges more autonomous enterprises and introduced competition – the marketisation of the sector (Furlong, 2005). With the new system came the 'dual funding stream' with its emphasis on 'output related funding', where colleges (or providers) are not only encouraged to enrol as many students onto their programmes as before, but also increase the retention and achievement of the students to earn maximum funding (Gillard, 2011; Panchamia, 2013). Although the sector has been subject to minor changes since, the dual funding stream system has remained basically the same.

A system that relies on students staying on a programme and achieving the qualification (passing, not achieving specific grades) to receive full funding entitlement can lead to educational organisations placing achievement above attainment – effectively, teaching to the test and narrowing the curriculum. Figures from the National Audit Office (2013) and the Skills Funding Agency (2014) showed very high levels of retention and achievement from many FE colleges, in fact, close to 100%. Such high figures can generate some skepticism, as 'the degree to which this is based on merit is questionable when confounding variables are assessed given the pressures faced by lecturing staff and managers to ensure the high levels of achievement necessary to secure funding' (Illsey and Waller, 2017: 478).

<u>Performativity in FE</u>

By introducing a marketised system, it was hoped that FE providers would rise to the challenge and possibly be more entrepreneurial (Johnson, 2006). However, instead, there was an increased reliance on performative targets, such as audits, inspections and a range of quality assurance measures (Newman, 2001). Such policy levers created a high pressure, stressful environment where teachers in the sector are driven to place more emphasis on the monitoring of statistical data and targets than the learning and teaching (Ball, 2009). The FE sector is now an environment that is very competitive, data-driven, consumed by a culture of policies and documentation and only focused on the achievement of qualifications as the measure of success – all factors that hinder rather than encourage high quality learning and teaching in the classroom (Ofsted, 2014).

The competitive market in which FE now finds itself goes some way to explain the reasons for the more corporate model that is used to govern the sector. All post-16 educational organisations, including sixth form colleges, training centres and private educational enterprises are targeting the same students and the potential income that they bring (Howard, 2009). Since 2001, policy makers have often referred to FE in terms more commonly associated with corporate business, such as a 'provider' rather than a college of further education, with learning being labelled as a form of 'supply' and teaching as 'delivery' (Howard, 2009). Even Ofsted has been known to use terminology that is more akin to the world of business, referring to students, parents, carers and employers as 'service users' (Ofsted, 2013: 5). Nonetheless, all

of these factors have contributed towards an environment and culture in which FE teachers now find themselves, and as a result, led to a pedagogic approach founded on ideas of 'efficiency' and 'effectiveness'. This 'efficiency' was in relation to how the resources worked and reduction of teaching costs, which was assumed to lead to 'effectiveness'. In doing so, it was hoped that relevant levers, such as organisational structures, processes and resources would be identified, that could result in ways to effect student outcomes in a positive way (Stoll and Mortimore, 1997; Green, 2013). However, Kenny (2008) warns that if a continual drive for efficiency is expected from teachers to do more with less, 'the effectiveness and the quality of teaching and learning will be reduced' (13).

It has become the norm to oversee teachers and hold them more accountable for their performance through a number of targets, measures and comparisons (Ball, 2003). These range from the number of students enrolled on a course, the retention of students (often checked at specific points during the year), the achievement on programmes (not necessarily the level of achievement but the number of students who 'pass') and the number of students enrolled on particular programmes that generate additional funding, such as Science, Technology, Engineering and Mathematics (STEM).

Neo-liberalism

The cornerstone of neo-liberal philosophy is liberty – the freedom for people to be able to forge their destinies in their own way, without any powers or organisations constraining or controlling the person's individual choice (Miller, 2014). The philosophy of neo-liberalism, particularly in the UK, became distorted when British government policy replaced freedom of choice, which incorporated mechanisms of 'voluntary exchange, spontaneous cooperation, the evolution of a complex structure through trial and error, acceptance and rejection' (Friedman and Friedman, 1980: 26), with the practice of competition. The government replaced 'choice' with fixed alternatives from which to select options, which was against the philosophy of neo-liberal philosophy as it adds constraints rather than freedom of choice.

In education, and particularly FE, such an approach has generated competition between educational institutions based on course fees and the speed in which the courses can be completed. There is no freedom of choice for the students relating to

the fees they pay or how they are to be taught in the classroom. All aspects are centrally controlled, with regulatory bodies that restrict any variation in the courses offered, the costs and funding (Miller, 2014). This distorted version of neo-liberalism that is now experienced with the added elements of competition, audits and surveillance, has negative consequences for learning and teaching in the FE sector (Archer, 2008). As a result, it would be fair to suggest that this new version of neo-liberalism actually created what is termed as 'managerialism', because it is 'designed to shift individuals' performances towards higher levels of flexibility, productivity, and cooperation with national economic objectives' (Davies and Peterson, 2005: 77)

<u>Managerialism in FE</u>

Managerialism, especially in education has been widely documented and critiqued since it became more commonly used from the 1990s (Miller, 2014). Anderson (2008) considered it as 'the introduction of private sector management practices to public sector institutes' (251). Walton (2011) referred to managerialism as an 'unjustified and distorting extension of market-dominated assumptions into many inappropriate areas where their consequences are destructive' (18). However, managerialism, although very much part of the educational system in the UK and particularly in FE, is a concept that is under-theorised, so there is not necessarily a true definition (Shepherd, 2018). It is often considered to be the embracing of private sector practices, focusing on excellence along with effectiveness and efficiency - the latter two being key points in a marketised sector (Deem, 1998). Gordon and Whitchurch (2010) claim managerialism is a form of governance which involves the separation of management from academic work, but where the managers take more control of the academic work through regulation and systems. Such a shift in authority and control from teachers to managers creates a weakening of the teachers' professional status and autonomy.

Different layers of management are used to regularly monitor teachers' performance to ensure a wide audit of quality assurance. This is achieved using a variety of methods such as appraisals, lesson observations and inspections (Green, 2013; Ball, 2003). The rationale for such a corporate model of public accountability is 'to set clear targets, to develop performance indicators, to measure the achievement of

the targets, and to single out, by means of merit awards, promotion or other rewards, those individuals who get 'results'' (Pollitt, 1993: 56).

This kind of approach is referred to as 'market-inspired managerialism' (Hogan, 1995: 226), although now more commonly referred to as New Public Management (NPM) (Green, 2013). Referring to the emphasis on a need for measurement in education, Biesta (2017) commented, 'we live in a time, after all, in which there is an abundance of information about the performance of individual students, groups of students, schools, school districts and even of national educational systems as a whole, just as the global measurement industry is trying to pin down the exact 'value' teachers are supposedly adding to all this' (315).

By 2010, a Government Select Committee Report recognised that education (including FE) has been subjected to 'constant waves of new initiatives,' with 'stresses and distortions caused by performance tables and targets' (Williams, 2010: 14). FE still finds itself adapting to the initiatives and policies that are being driven by policy makers, in which the focus is constantly shifting, leading to regular change and the recalibration of what colleges represent (Ball, 2003; Shore and Wright, 1999). By complying with such changes in emphasis, teachers can find themselves making compromises on the approaches that they would prefer to teach a particular topic and/or subject (Green, 2013). Such pressures also impinge on the time available for teachers to develop and create opportunities to apply effective pedagogic practises that are tailored to the needs of the students and result in a rich educational experience (Green, 2013).

Teachers are compelled to address accountability measures through evidence by concentrating on the targets they are measured against. This is often based on learning, retention and potential achievement of students when set internally, and more numeric attainment targets when imposed externally. The irony is that although teachers may achieve their targets, they may not meet the needs of the students by limiting opportunities for them to be creative, curious and inquisitive while they are studying (Freire, 1985). The curriculum often needs to be narrowed by teachers to ensure that students attain the qualification/results. This often involves teaching to the test or to 'pass' criteria – effectively restricting the opportunities for students to achieve to their full potential (Green, 2013; Biesta, 2004). This suggests that the

emphasis placed on teachers to demonstrate accountability in what they do could result in the learning experience of students being reduced to the simple transmission of knowledge from the teacher to the student, restricting opportunities for deeper understanding to be developed. Freire (1972) looked at this transmission of knowledge through a critical pedagogical lens.

<u>Freire's educational banking system</u>

Freire (1972) believed that education and politics were inextricably linked, therefore all aspects of education have a political agenda. He argued that as much as teachers think they are making their own decisions in respect of their teaching practice, it was all ultimately political, because they could only operate within the constraints in which they are allowed to work. Freire (1985) believed that education could be used to deny the students the opportunity to achieve to the best of their ability (intellectual empowerment) by restricting the amount of information that they are given on a topic or subject. This was an approach that he referred to as the banking system (Freire, 1972).

Freire equates much of formal education to that of a process of depositing the knowledge or information received from the teacher (like banking money) and recalling it when required (withdrawing money). The students are considered empty vessels which the teacher is able to fill with information (deposit) and knowledge (Freire, 1972). The information is then memorised (stored in the vaults) by the students and recalled (withdrawn) when needed for a test or assessment, for example. There is no higher order thinking encouraged or deep learning of the subject or topic, only the transfer of knowledge from one person (teacher) to another (student).

The relationship between the teacher and the students is didactic in character. The teacher (who is the subject) narrates information/knowledge to the students who are the listening objects (Freire, 1972). Effectively, all the teacher does is train the students to memorise the narrative (rote learning) for future recall without necessarily understanding what the actual information/knowledge actually means (Freire, 1972). The banking system only ensures that the mind is open to receive information/knowledge. However, it is important for the learning and teaching experience of HE students that they are given the opportunity to engage in the

learning experience and build their knowledge through discovery, analysis and critical reflection. The limits of transmission that results from the banking approach is not compatible for such a high level of study. Therefore, an alternative pedagogic approach needs to be considered that can work within the constraints of the sector, but still gives the students opportunities and experiences to develop their knowledge.

2.3 Teaching HE in an FE context

Partnerships between universities, colleges and in many cases employers, provides a flexible HE provision and opportunities for people who, for a host of reasons, may not normally progress to HE via more traditional routes (Aldous, 2014). Higher education programmes have been delivered by further education colleges since the 1960s and, based on 2017/2018 figures, account for 151,000 students - approximately 6.5% of all HE provisions in the UK (AOC, 2017; HESA, 2017).

Although some colleges teach programmes up to level 6 (degree), they more commonly deliver programmes up to level 5 (foundation Degree or HND) (QAA, 2013). Programmes such as foundation degrees increase students' skills level and employability potential and attracts 'more people into higher education with a richer mix of backgrounds than before' (Blackstone, 2000: 2). The teaching of HE programmes in an FE context owes much of its appeal to the increased 'contact' or teaching time that is given to the students and the range of teaching approaches used (McAndrew, 2010).

The range of courses offered are wide and mostly vocationally orientated, and often attract an equally broad range of students (Parry et al., 2012). Although the profile of students that study HE in an FE setting are varied, data has shown that there are some defining characteristics. 'More likely to be over 25, more likely to study part-time, and more likely to come from areas with low rates of participation in HE than the students that are in universities' (HEFCE, 2006:9).

Mature students in full-time employment have the opportunity to enrol on part-time programmes, which has meant that FE institutions have to adapt by providing a more flexible approach to teaching, assessment and provision of resources (Ehiyazaryan-White, 2012). In truth, the FE sector is proud of the fact that it offers something that is distinctive and contributes towards the widening of access to HE (Turner et al.,

2009). The importance of widening participation in HE was recognised during the study with the release of a government green paper, reiterating the UK prime minister's social mobility goals, which include:

- 'A doubling of the number of socially disadvantaged students entering higher education between 2009 and 2020 (from 13.6% to 27.2%)'
- 'Increasing the number of black and minority ethnic (BME) young people attending university by 20% by 2020 (equivalent to 19,000 extra students)'

(BIS, 2015: 13)

However, from a student's perspective, the HE ethos in an FE context is different to that of HE in a university, largely due to the effects of a culture of performance management that appears in many respects, very child (Ofsted) focused, concentrating on questioning rather than discussion, and achievement rather than student engagement (Simmons and Lea, 2013).

The potential and appeal of HE programmes offered as a result of alliances between universities and FE could be affected if the same performative measures, targets and comparisons as those applied to FE provision are forced onto the HE in FE programmes (Ball, 2003). Concern has been expressed from both an academic and policy perspective in relation to the problems of fostering an HE-style environment for students due to the overly performative culture of FE and the risk of it seeping into HE programmes (Harwood and Harwood, 2004; Golding and Griffiths, 2008; Bathmaker and Thomas, 2009; Turner et al., 2009; Lea and Simmons, 2012). As a result, tensions rise for those who teach HE programmes in this context (Feather, 2010). Research of HE in FE suggests that the quality of the teaching and learning experience is secondary to funding; quality is focused on the business of achieving qualifications rather than providing a quality learning experience (Feather, 2011).

A major influence of HE in FE is that teachers are employed by colleges, paid in line with FE pay scales, and employed to teach across a range of programmes and levels (Young, 2002; Harwood and Harwood, 2004; Turner et al., 2009). Therefore, FE programmes often take priority because that is the main focus of colleges in relation to funding and national statistics. The 'contact time' which the teacher spends teaching students across all programmes and levels (FE and HE) during a

typical week can be around 25-26 hours (Harwood and Harwood, 2004). Add to that administration duties such as marking, lesson planning and the like, it is easy to see that there is limited time for any research to be conducted that could assist the teacher in adding a depth of knowledge to the specialist HE modules that they teach (Feather, 2010).

According to government policy makers, the accountability measures applied to the FE sector are part of a professionalisation agenda to improve the quality of provision and ensure that clearly prescribed objectives are achieved (Lomas, 2003). However, the same measures are being replicated with those who teach HE in FE. As a result, teachers can experience what Ball (2003) refers to as the more 'sinister side' of performativity measures, where teachers feel that they are being watched and judged from all layers of management. QAA (2013: 2) describe this as an 'audit culture of unwarranted compliance, typified by panoptican style surveillance'.

One of the most common ways in which teachers are monitored and have to demonstrate accountability is through lesson observations. However, the Ofsted approach of being assessed by a 'senior' colleague based on a set of competences rather than peer observations which are more common in universities, has become a topic of debate (Gosling and O'Connor, 2009; Nasta, 2011). The effectiveness of any lesson cannot be 'judged' in such a top-down way, and HE particularly requires a more scholarly approach to learning that is based on what is known but also challenges the students to give as much consideration and academic rigour to what is not yet known. The Ofsted approach to lesson observation does not recognise such elements as 'effective', therefore, a HE pedagogic approach that encourages reflection and debate risks being stifled or constrained (O'Leary, 2013).

When teaching HE, regardless of the fact that it is being undertaken in an FE environment, the objective must be to help the students develop their intellectual capacity (Tummons et al., 2013). Because of the level of the subjects being taught, this means that students are expected to develop their sense of criticality as they carry out informed analysis of the topics they are studying, as well as encouraging them to gain a deeper understanding of the topics than expected within FE programmes (Tummons et al., 2013). In addition, it is also important that teachers use pedagogic approaches that allow students to relate the topic being taught to

their prior knowledge as this enables them to make cognitive connections to help construct their own knowledge (Brod et al., 2013). Therefore, there are many elements to consider when teaching topics in the HE classroom to ensure that opportunities for learning are planned for and implemented. I now consider what is meant by learning. Coffield (2000a and 2000b, cited in 2008) offers a useful definition:

> Learning refers only to significant changes in capability, understanding, knowledge, practices, attitudes or values by individuals, groups, organisations or society. Two qualifications. It excludes the acquisition of factual information when it does not contribute to such changes; it also excludes immoral learning as when prisoners learn from other inmates in custody how to extend their repertoire of criminal activities.

(Coffield, 2008: 7)

Coffield's definition centres on learning being about significant changes in individuals' understanding or behaviours. However, he also stresses two prerequisites; firstly, factual information does not qualify unless it specifically influences the learning that has taken place, and secondly, there must be an ethical acquisition of the learning experience.

Another aspect of the learning process is to help students become more autonomous and take responsibility for their own learning. Students are expected to engage with the reading that is required for their study, along with a need to manage any independent study. Ensuring that students understand the demands and requirements for assessments helps with autonomy and has been effective with those transitioning from FE to HE (Rust et al., 2003). A key part of the assessment process that develops learning and understanding further is feedback and feed-forward provided in response to student assessments. Feedback and feed-forward recognise the level of knowledge and understanding, and reports on the level of achievement against set criteria and is very important in HE-focused learning and teaching (Sadler, 1989; Price et al., 2010).

Tummons (2011) suggests a number of key points that should be considered when giving students feedback:

- Clear and unambiguous – it is important that the student understands what is being said without the risk of ambiguity.
- Specific – it must not be general but very direct and explicit.
- Supportive, formative and developmental – this requires teachers to avoid an instrumental approach of a list of what is good and what is not; it should encourage students to build upon their previous successes and understand where they made errors.
- Timely – the feedback needs to be given as soon as practically possible as this is when it is most useful to the students because they may have a more recent memory of completing the assessment.
- Delivered in an appropriate environment (if given verbally) – the student needs to be comfortable and the environment needs to be relatively quiet and private.

As is clarified by Tummons (2011) above, it is essential that teachers stress the importance of feedback so students can value and learn from the feedback; at its heart, feedback is about students developing and extending their knowledge and understanding. Other elements that are as equal in importance which help students to progress on their HE journeys include: the depth to which topics are taught; the need for students to develop their sense of criticality and autonomy, and an understanding of assessment processes and requirements. However, there are further elements to the learning journey in HE.

2.3.1 Progression through to HE

Healey and Jenkins (2009), based on the work of Hodge et al (2008) conducted research with undergraduate students in relation to their developmental journey through the HE learning process. They identify 3 levels of development in students' transitions before they become independent learners (see table 2.1).

table 2.1 – <u>Healey and Jenkins (2009: 38) based on Hodge et al., (2008)</u>

The developmental journey of the student	
Developmental level	**Student traits**
Reliance on external references (Foundations) *Level 4*	• Knowledge viewed as certain • Reliance on authorities as source of knowledge • Externally defined value system and identity • Act in relationships to acquire approval
At the crossroads (Intermediate learning) *Level 5*	• Evolving awareness of multiple perspectives and uncertainty • Evolving awareness of own values and identity limitations of dependant relationships
Self-authorship (Capstone) *Levels 6 and 7*	• Awareness of knowledge as contextual • Development of internal belief system and sense of self capacity to engage in authentic, interdependent relationships

The 3 levels of development or typologies shown in table 2.1 give an insight into how students' learning may lead to independence and autonomy as they build up their knowledge and skills, and as a result, become more free thinking and confident to access support if needed (Healey and Jenkins, 2009). Interestingly, the 3 typologies do not suggest that students are necessarily independent initially, but through the process of HE study, and a degree of support through dependant learning at levels 4 and 5, they become increasingly independent in preparation for learning at levels 6 and 7 (Simmons and Lea, 2013).

Healey and Jenkin's model echoes other interpretations of what the process of HE learning involves and includes the notion of the student as producer (Neary and Winn, 2009); moving from surface learning to deep learning (Ramsden, 2003); Socratic forms of learning (Abbs, 1994) and moving away from pedagogy to andragogy (Knowles, 1980). Andragogy is a term associated with Malcolm Knowles (1980) and describes the methods and practice of teaching adults. It is based around 6 assumptions. It originally consisted of 4 assumptions (Knowles, 1980), later, 'Motivation' was added (Knowles, 1984) and 'The need to know' (Knowles, 1989).

1. *The need to know*. Adults need to know why they need to learn something before undertaking to learn it. Tough (1979) found that when adults undertake to learn something on their own, they will invest considerable energy in probing into the benefits they will gain from learning it and the negative consequences of not learning it.

2. *The learners' self-concept*. Adults have a self-concept of being responsible for their own decisions, for their own lives. Once they have arrived at that self-concept, they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction.

3. *The role of the learners' experiences*. Adults come into an educational activity with both a greater volume and a different quality of experience from that of youths….. For many kinds of learning, the richest resources for learning reside in the adult learners themselves.

4. *Readiness to learn*. Adults become ready to learn those things they need to know and be able to do in order to cope effectively with real-life situations….. There are ways to induce readiness through exposure to models of superior performance, career counseling, simulation exercises, and other techniques.

5. *Orientation to learning*. Adults are life-centered (or task-centered or problem-centered) in their orientation to learning. Adults are motivated to learn to the extent that they perceive that learning will help them perform tasks or deal with problems that they confront in their life situations.

6. *Motivation*. Adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), but the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life, and the like.

(Knowles et al., 2005: 64)

From the above, it is evident that Knowles (2005) places the responsibility for learning onto the adults themselves and makes a clear distinction between adult and child learning. However, andragogy does have many critics regarding the lack of empirical evidence to base any claims of a difference between child and adult learning, but many in HE recognised the characteristics shown above (Davenport, 1993; Fry et al., 2009). In addition, self-direction, the use of personal experiences and a preference for problem-centred learning are ideal attributes for the types of learning approaches that are suited to HE such as self-directed study, student autonomy and experiential learning. Development of knowledge is facilitated with the

support of the teacher who, over a period gives way and allows the students to develop their skills and construct their knowledge through discovery, engagement with the topic materials and by task-based interactions with each other (Lea, 2012). An approach suited to encourage student and teacher collaboration in the classroom is through a social constructivist approach.

2.4 Learning and teaching approaches suited to HE in FE

Based on the work of Vygotsky, social constructivism is a branch of constructivist theory that emphasises the influences that a student's background and experiences shape their learning, the way they interpret concepts and develop understanding. However, unlike Piaget's cognitive constructivism, which is based on the notion that knowledge is constructed by the individual based on their own understanding and experiences (Lourenço, 2012), Vygotsky's social constructivism is based on the notion that learning takes place as a result of social interaction with others and the sharing of thoughts and experiences (Schreiber and Valle, 2013). The teacher has an important role in the learning process by helping to extend the Zone of Proximal Development (ZPD) and supporting the student through their learning experience.

By externalising their thoughts, views and perceived understandings of concepts with others, students are able to engage in discussion and debate with others; this experience offers multiple perspectives and different world views (Schreiber and Valle, 2013). Teachers are able to instigate critical discussion among students to encourage them to engage with each other to construct their own meanings which they can then internalise, subject to memory (Powell and Kalina, 2009).

I believe that a social constructivist approach to learning and teaching is suited to the HE classroom because it encourages a sharing of ideas and views that help develop understanding. A major benefit to the students' learning is the opportunity to engage with peers who offer differing perspectives and world views (Schreiber and Valle, 2013). By encouraging students to engage in discussion to express (externalise) their views, the teacher has the opportunity to identify any misconceptions and misunderstandings. Vygotsky's Zone of Proximal Development may be the ideal social constructivist approach to support this.

2.4.1 Vygotsky's Zone of Proximal Development (ZPD)

The 'Zone of Proximal Development' is the difference between what a child is capable of doing at a specific point in time, against levels of understanding that the same child is able to achieve with the assistance of a teacher or peer at the same point. Therefore, what the child is able to do with some help at a particular point in time, they would be able to do without help in the future (Vygotsky, 1978). The difficulty of the tasks that children are required to complete is very significant. It is important that tasks are sufficiently difficult to challenge the child but also be achievable, if not by themselves then with the help or support provided by more knowledgeable people, which is often the parent or teacher, but could also be a peer. A good teacher creates a learning environment in which children are asked relevant questions to help guide them in their quest for discovery, and encourage them to be inquisitive (Chen, 2012).

The role of the teacher in post compulsory education is significantly different to a teacher's role in schools. HE in FE exposes the students to more life experiences than that of schools, so the role of the teacher is to open the doors to knowledge, allowing the students to discover new or deeper levels of understanding for themselves. The teacher or peer may provide considerable support to the student initially but will offer less as the student becomes more confident and competent at completing the tasks on their own; the students construct their knowledge from their learning experiences that they have gained (Vygotsky, 1978). ZPD is a process of support and student development that can be applied for different topics and levels of difficulty. A simplified linear representation is illustrated (see figure 2.2).

figure 2.2 - Adapted from Vygotsky (1978) - a linear representation of ZPD

Vygotsky (1978) states that students' ability to develop the skill of thinking and reasoning is the result of a social process. Initially, this happens through help, guidance and encouragement communicated to the students by the teacher or a knowledgeable peer. This experience allows the students to make sense of what they know, what they have seen or what they have been instructed to do during tasks. It is important to emphasise that ZPD is not about the transfer of knowledge and skills, but the creation of knowledge and understanding by the students following collaboration with the teacher or peers (Tummons et al., 2013).

There are various approaches in which the teacher can support the student during the ZPD. In relation to the teacher in a HE setting, one approach could be by offering the students some guidance on the ways to approach a given task or asking them to think about key points, effectively helping them start in the right direction. As Bruner (1997: 69) explains, applying scaffolding in such a way helps by 'shielding a learner from distraction, by fore fronting crucial features of a problem, by sequencing the steps to understanding, by promoting negotiation'. Clearly, in order that the teacher is able to offer the appropriate guidance and advice, a sufficient degree of knowledge is required (Tummons et al., 2013).

As part of the social constructivist process, students are encouraged to express their thoughts out loud through discussion and questioning with their peers and the teacher. During this interaction, the teacher is able to offer the appropriate help and support to allow the student to work through the task. As the learning process evolves, students become more competent and confident with a given task, and their ability and thoughts become more internalised. As a result, the cognitive process develops, and students become more able to think and reason for themselves, giving them a degree of intellectual empowerment. During the learning process, the support provided by the teacher is gradually reduced as the students' thinking skills improve and they become more competent with the task. Vygotsky (1978) believes that cooperation and interaction with others is the key to learning.

Although Vygotsky's studies were conducted with children, such an approach may be applicable to older students in HE. With the range of social cultural backgrounds and abilities that are common among students in the FE environment, ZPD could provide a very supportive learning environment, contributing towards the

construction of knowledge and understanding of topics. Both Kolb's Experiential Learning Cycle (which I outline further in this chapter) and Vygotsky's ZPD are cognitive processes in which the students are empowered to build up their knowledge through experience and understanding. These processes have the potential to work well in the HE classroom and add some structure to the lessons. However, it is also important that a 'full' pedagogic approach to lessons is well planned and executed to ensure that a rich learning experience is achieved.

Another approach that is particularly suited to vocational programmes is Kolb's Experiential Learning Cycle (ELC). This learning and teaching model is an approach that guides the students through specific stages of learning using experience and reflection. The origin of experiential learning is taken from the constructivist work of Dewey and Piaget and Freire's praxis – where dialogue is used to stimulate reflection which will result in some form of action (Freire, 1972). Experiential learning theory is also strongly connected to social constructivism and Vygotsky's ZPD (Kolb, 1984; Vygotsky, 1978).

2.4.2 Kolb's Experiential Learning Cycle (ELC)

Kolb's ELC has been influential in attempting to understand the nature of experiential learning (Vince, 1998). Kolb (1984) advocates that the learning process required to develop knowledge is the result of the interaction of theory with the experience of application (Dunlap et al., 2008), resulting in the student being fully engaged in the process, and the teacher assuming a facilitating role. However, it is important to note that the model is based on 6 assumptions (Kayes, 2002):

<u>Learning is a process not an outcome</u>

Experiential learning is positioned on a different epistemological stance to that of behaviourist theories, such as those of Skinner, Pavlov, Watson, Lock amongst others. The behaviourist stance is that there are consistent, fixed elements or patterns of thought that always remain the same and are stored in the memory as facts, knowledge or actions applied when required as they are triggered by a stimuli. The behaviourist view is that the amount that someone has learned can be measured by how many elements have been recalled in response to the stimuli, effectively, outcome-based learning (Kolb, 1984).

In contrast, experiential learning is based on a different set of assumptions. Learning and knowledge are thought processes formed through experience and develop over a period of time following more experiences. Therefore, each thought process is an iteration on the previous experience, so no two thoughts are the same. Therefore, experiential learning is a process of knowledge construction rather than that of recall (Kolb, 1984).

<u>Learning is driven from experience</u>

Learning is a continuous process that involves the experience of learning followed by relearning due to new experiences. As the process involves the unique, experiences of individuals, each person enters a learning situation with different ideas, beliefs and theories about a topic (Kolb, 1984).

<u>Learning requires the learner to resolve conflicts through dialogue</u>

Kolb believes that learning results from a process of tension and conflicts; the experiential models of Lewin (1946), Piaget (1936) and Dewey (1938) all demonstrate this. Lewin's (1946) model has a conflict between concrete experience and abstract concepts, and action and observation. Piaget's (1936) framework highlights an accommodation of ideas to the external world in conflict with the assimilation of experience into existing conceptual structures. Dewey's (1938) Model of Learning centres on the transformation of feelings and impulses of concrete experiences into a purposeful action. Tension is created after students have engaged in concrete experiences, when they are asked to pause, observe, reflect and make a considered judgement on the concrete experience to create a purposeful action (Dewey, 1938).

With Kolb's ELC, new knowledge and skills are developed from the tension and conflicts of four modes of experiential learning (skills/abilities) that students need to engage with. Such modes involve the impartial commitment to new experiences; observation and reflection of their experiences from various standpoints; the ability to integrate their observations into theories to develop concepts; the theories and concepts should result in an action that will solve problems and challengers. This is a difficult process to achieve because students have to contend with two continua which are polar opposites – the perception continuum involving feeling of an experience, and the development of a theoretical model, and the processing

continuum involving reflection of an experience, and the transposition of thoughts into action (Kolb, 1984).

Learning needs to be holistic and integrative

Learning is not simply something that happens in the classroom, it happens in the workplace, at play, through personal relationships, in books, films, nature, in fact, every aspect of a person's life from childhood to old age. Learning involves a student considering everything that has been experienced in their world, along with new information that they have experienced in the classroom. By using concepts such as decision making, problem solving and comparison, students are able to adopt their metaphorical thinking and resistance to ambiguity to be more flexible in accepting what they believe in order to understand (Kolb, 1984).

Learning requires the individual to interact with the environment

Learning not only involves the environmental experiences that a person is exposed to, but also internal feelings experienced in relation to it. Therefore, the word 'experience' has a dual meaning. One is subjective (personal) and the other objective (environmental). Learning is very much a transaction between the two experiences with the individual acting on an object materially and mentally, leading to a change in perception and behaviour which results in understanding (Bradford, 1964).

Learning creates knowledge

Learning is a process not a concept or outcome, therefore, the development of knowledge is something that is constantly constructed and reconstructed – a fluid entity (Kolb, 1984). When considering how knowledge is acquired, how it develops and broadens, and how it becomes structured into an organised understandable form, Piaget believed that people either learned directly from the teaching approach, or by trial and error based on what they have experienced, and following thought and reflection – which could be considered an experiential approach. Piaget theorises:

> Either knowledge comes exclusively from the object, or it is
> constructed by the subject alone, or it results from multiple
> interactions between the subject and the object – but what
> interactions and in what form? Indeed, we see at once that these are

epistemological solutions stemming from empiricism, apriorism, or diverse interactionism.

(Piaget and Kamii, 1978: 651)

Kolb's experiential learning theory involves a four-stage cycle (see figure 2.3).

figure 2.3 - <u>Kolb's Experiential Learning Cycle (ELC) – Kolb (1984)</u>

Kolb's ELC is a cycle that consists of 4 adaptive learning modes:

<u>Concrete Experience (CE) – feeling:</u> The students engage in hands-on tasks, where they actively experiment with a concept and feel the experience of actually doing it (Konak et al., 2014).

<u>Reflective Observation (RO) – watching:</u> The students reflect and discuss their experience and try to base it on a comparable one they may have encountered (Rogers, 2002).

<u>Abstract Conceptualisation (AC) – thinking:</u> The students create their own generalised principle and develop a theoretical model based on the experience (Kolb, 1984).

Active Experimentation (AE) – doing: The student considers and transposes their thoughts and reflections to finalise a plan of action to once again try out as concrete experience (Konak et al., 2014).

The model consists of two dimensions (continuums) that each represent 'dialectically opposing orientations' (Kolb, 1984: 41). The perception continuum consists of Concrete Experience (CE) and Abstract Conceptualisation (AC), and the processing continuum comprises Reflective Observation (RO) and Active Experimentation (AE). The learning process is based around the transaction that takes place between these opposing adaptive orientations and how they are resolved. The Concrete Experience (CE) and Abstract Conceptualisation (AC) of the perception continuum are opposing processes that focus on how experiences are interpreted and understood (prehension). This can be done through conceptual interpretation of an experience or the feelings sensed during the actual encounter (Kolb, 1984). The Reflective Observation (RO) and Abstract Experimentation (AE) is a dialectic relating to the opposing ways in which an experience can be understood (transformed). This is achieved using reflection and through the reshaping of what is now understood in the external world and how it relates to the experience.

Knowledge is the result of the transformation of experience from the learning process. The ELC centres on the notion that learning cannot be achieved through prehension alone or the transformation of an experience – both are required to enable the students to understand why they need to conduct tasks in a specific way to achieve a particular outcome. The experience then needs to be reflected upon and transformed. Likewise, transformation cannot occur unless there is an experience to reflect upon. The students need to go through all four stages of the learning cycle in order to achieve a complete learning experience (Kolb, 1984). Svinicki and Dixon (1987) support this view, stating that by constructing a learning process that guides the students though the learning cycle, they are encouraged to engage at each stage. The expectation is that students will reflect on their initial experiences to help develop a theoretical model and transpose their thoughts and actions into a final plan.

The central, circular arrows of the ELC model indicate the direction/order in which the students should be guided through the 4 adaptive learning modes. This order

enables the students to develop underlying concepts through a process of, knowledge, experience and reflection (Konak et al., 2014; Abdulawahed and Nagy, 2009, 2011). Although agreeing with Kolb's ELC in principle, Forrest (2004) argued that such a simplistic view of the process was misleading because learning does not necessarily take place in ordered phases but may often happen in overlapping steps. However, within the context of my study, a framework or structure that enables students to go through a process such as Kolb's ELC offers students and teachers space to implement and reflect on actions.

Successful examples of the use of Kolb's ELC are more often based on practical applications (such as those for vocational programmes) and training projects that are conducted over a number of weeks (Clark et al., 2010; Raschick et al., 1998). David et al (2002) report using Kolb's ELC for practical tasks with engineering students which they claim resulted in deeper learning and better retention of information. Other researchers have advocated the use of Kolb's ELC in the classroom environment such as Svinicki and Dixon (1987) who recommend the model for designing classroom activities, and Stice (1987) who created learning strategies based on Kolb's ELC.

Jacobs (2003) highlighted a potential problem of the ELC process in practice, stating that some critics argue that the transfer of knowledge from the teacher to the students is not necessarily guaranteed because students can sometimes be 'vulnerable and naïve', particularly when articulating what they have experienced into a source for learning (Mughal and Zafar, 2011:34). Therefore, it is important that the responsibility of the teacher includes offering support to the students throughout the process to help identify and interpret the knowledge from the experiences (Mughal and Zafar, 2011).

Literature has highlighted the potential effects that monitoring, and accountability can have on the quality of the learning experience. However, it is equally important to avoid a narrowing of the curriculum which can result in the teacher only depositing information rather than knowledge and understanding - what Freire (1972) refers to as the 'banking system' and also referred to as 'surface learning'. It is also important that a scholarly pedagogic approach is undertaken to generate reflection and debate for deeper learning and understanding to develop (O'Leary, 2013). Therefore, an

awareness of the characteristics of deep and surface learning is imperative, along with an understanding of approaches that can be taken to achieve such levels of learning in the HE classroom (Tummons et al., 2013; Ramsden, 2003).

2.4.3 Deep and surface learning

The concept of deep and surface learning was first introduced in relation to active cognitive processing by Craik and Lockhart (1972). However, it was the work of Marton and Säljö (1976a; 1976b) that laid the foundation for what is recognised as deep and surface learning today. Many studies have been conducted since, prompting Webb (1997) to observe that deep and surface learning had become a 'canon for educational development' (Webb, 1997: 195), in other words a centre point, with the focus generally on pedagogical approaches adopted by the teacher in the classroom and the effect they have on what students learn (Godor, 2016). But it does have its critics. Haggis (2003) noted that the unquestioning and widespread acceptance of the concept had resulted in a narrow focus on the way researchers generate and interpret data about student learning. Tormey (2014) raised concern that the notion of deep and surface learning had become both a metaphor and a valid concept, with the dichotomy 'obscuring the ways in which the empirical work could continue to a better understanding of teaching and learning' (Tormey, 2014: 2). With such views expressed, what is actually meant by deep and surface learning?

Deep Learning

Deep learning suggests that the students gain an understanding of topics by interacting critically with the teaching and resources, are able to make connections with previous knowledge and experiences and consider the arguments before offering conclusions (Marton et al., 1984; Entwhistle and Ramsden, 1983). Therefore, by engaging in a deep approach to learning, the students are able to construct their own meaning and understanding of a topic at a more complex level (Godor, 2016).

Surface Learning

Surface learning is characterised as an approach that seeks to memorise information without critically engaging with the teacher or resources, accepts the information at face value and is often only motivated by assessment criteria (Marton et al., 1984;

Entwhistle and Ramsden, 1983). Therefore, a student learns just enough of a topic to fulfil the assessment requirements for a 'pass', engaging in a low level of cognitive activity (Biggs and Tang, 2007).

The characteristics of the approaches taken by students when engaging in deep and surface learning are offered by Tummons et al (2013: 59) and shown in table 2.2:

table 2.2 - <u>Deep and surface learning characteristics (Tummons et al., 2013: 59)</u>

Deep Learning	Surface Learning
• The intention is to understand key concepts or meanings • Relates knowledge derived from different parts of the course or from different sources into a coherent whole • New knowledge is related to established knowledge • Identification of patterns and principles to inform conclusions • Abstract or theoretical knowledge is related to everyday experience • The task is seen as a means to develop knowledge	• The intention is to complete the task • Parts of the task are not related in a logical manner and coherence is not sought • Failure to identify patterns or principles • Information is memorised, especially for the purpose of assessment • The task is seen as an imposition in itself

Ramsden (2003) argued that students respond to whatever teaching approaches are made available to them, and the activities that they have engaged with. Therefore, the approach that the teacher takes to ensure that a sufficient depth of knowledge is given is significant (Tummons et al., 2013). This also makes the assessment approaches important; if the assessment only encourages a surface learning response then that is all that can be achieved (Ramsden, 2003).

There may be circumstances when the teacher is responsible for the students to adopt a surface learning approach. The teacher may only be assessing for the facts of a particular topic, or it may be as a result of the teaching of a topic being done in a fragmented way which makes it difficult for the students to have enough coherence to construct their own knowledge (Howie and Bagnall, 2013; Biggs and Tang, 2007). Additionally, if the teaching of a topic or subject is conducted in a limited amount of

time, it may not allow students the opportunity to assimilate the information and reflect upon what they have learnt and may be interpreted as bombarding the student with information, thus effectively creating a cognitive overload (Howie and Bagnall, 2013; Biggs and Tang, 2007).

When teaching in HE, teachers expect students to engage in deep learning to stimulate their interest in the topics and making the experience more fulfilling (Tummons et al., 2013). Approaches to teaching that are associated with deep and surface learning were suggested by Ramsden (2003: 80) and shown in table 2.3.

table 2.3 - Deep and surface approaches to teaching (Ramsden, 2003: 80)

Deep approaches	Surface approaches
- Teaching and assessment methods that foster active and long-term engagement with learning activities - Stimulating and considerate teaching that demonstrates the teacher's commitment to the subject matter and which stresses meaning and relevance to students - Clearly stated academic expectations - Opportunities to exercise responsible choice in the method and content of study - Interest in and background knowledge of the subject matter - Previous experiences of education that has encouraged deep approaches to learning	- Assessment that emphasises recall or the application of trivial procedural knowledge - Assessment methods that create anxiety among participants (ie questioning and tests) - Cynical or conflicting messages about rewards - An excessive amount of material in the curriculum - Poor or no feedback on progress - Lack of independence in studying - Lack of interest or background to the subject being taught - Previous educational experience that has encountered surface approaches

The teacher may not necessarily be able to affect all the approaches, but good, consistent teaching that encourages students to critically engage in the subject content and be clear on what they need to learn will contribute greatly to their knowledge understanding (Tummons et al., 2013). Although there are critics of the deep and surface approach, it does raise an awareness of how and why we may teach a topic in a particular way. A potential issue when considering learning and

teaching approaches is that such dichotomies create a false 'choice' between student and teacher centred approaches (Clark, 2006).

The work of Kember et al (2004), Entwistle and Entwistle (2003), Ramsden (2003) and Biggs et al (2001) all made similar assumptions in relation to student learning. They all agreed that the approach adopted by students is as a result of the interaction between three factors. The first is the students' contribution to their own learning, such as their ability to learn, the motivation to want to learn, any prior knowledge that can contribute to the learning experience, their interest in the topic and wanting to learn about it and the time that they attribute to their learning. The second factor is that of the actual learning context, for which the teacher selects particular pedagogic approaches to encourage learning to take place. The third and most important factor is how students engage with the teaching and the pedagogic approach taken in the classroom (Platow et al., 2013).

2.5 The merging of the three models

The three models highlighted have the potential to be combined to create a basic framework for a learning and teaching approach that can be used in the HE classroom. The social constructivist aspect of Kolb's ELC and Vygotsky's ZPD indicate that the two models could work well together. The teacher needs to ensure that the students engage critically with the teaching, resources and knowledge and understanding from their experiences to make connections and offer arguments before reaching conclusions (Marton et al., 1984; Entwhistle and Ramsden, 1983). The teacher guides the students through each stage of the ELC for each topic to ensure that they engage with each element of the learning cycle. Therefore, when lessons are planned, the teacher must ensure that they give the students an experience of a topic on which to reflect. During this process, the students are encouraged to openly externalise their thoughts, express their views and engage with the teacher and their peers in relation to their assumptions, views and possible conclusions.

The social constructivist approach gives the opportunity for the teacher to identify if students have a surface or deep knowledge of a topic, and apply Vygotsky's ZPD accordingly, offering appropriate support and advice as required. This period of reflection and discussion helps the students to develop a generalised principle

around their experience of the topic. The students are then able, with appropriate guidance and advice from the teacher, to transpose their thoughts and reflections into a plan that can be trialled as a new experience. Throughout the process, the teacher is able to identify, through observation, discussion and questioning, what the students know and what they need to know and apply the ZPD to help encourage a deeper learning experience. By engaging in a deep approach to learning, students are able to construct their meaning and understanding of a topic to the level demanded on an HE programme (Godor, 2016).

The three elements of structure (ELC model), support and guidance (ZPD) and emphasis on the pedagogic approaches used in the classroom to ensure critical engagement with the topics (Deep and Surface Learning) will be used as essential characteristics of any new learning and teaching model developed as part of this study. The social aspect of the process is vital for the three elements to work together. As the students are actively encouraged to externalise their thoughts and views with others, support and guidance offered can be personalised in response to what the students' understanding is at a particular point in the process and intervene as necessary.

The development of the new learning and teaching model and how the combination of the ELC, ZPD and Deep and Surface learning fit with each other can be seen in chapter 4. I trialled the model with my colleagues between February and June in 2016 (see table 4.1) and then asked the participating students and teachers to reflect on its effectiveness as a learning and teaching model for the HE classroom.

2.6 Conclusion

The knowledge discovered during this stage of the study highlighted the complex nature of the FE sector and the effects resulting from marketisation. The process also revealed how HE can be impacted when taught in an FE context. By understanding the constraints imposed on the FE sector, appropriate learning and teaching approaches were considered that may contribute to an effective learning experience. As a result, a combination of Kolb's ELC, Vygotsky's ZPD along with pedagogic approaches that ensure critical engagement with the topics (Deep and Surface Learning) were used as the key characteristics of a learning and teaching model as explained in section 2.5.

CHAPTER 3

<u>Research Design</u>

3.1 Introduction

In this chapter, I discuss the research design for the study, reiterate its aims and the research questions that I developed to achieve the overall objectives. Based on the research conducted relating to effective teaching approaches within chapter 2, I was able to reflect on and consider a range of methodological designs/approaches that might be used to investigate a complex environment such as the HE classroom in an FE context. I discuss my chosen methodological approach appropriate for the aims of my research, and outline the rationale for the study and the methods I used to collect the data. The chapter ends with a critique of the methodology and the methods applied to examine the strengths, potential weaknesses and possible limitations of my chosen approach.

<u>Aim of the study and research questions</u>

My aim in this study was to identify the effects of marketisation on pedagogic practice in the HE in FE classroom and to enable the development of a pedagogy which suits HE teaching within the constraints of the FE structures. I wanted to use the students' and teachers' voices and their personal experiences to help shape any changes that may need to be made to pedagogic practice to create a more positive environment that benefits all in his environment.

The research questions for the study were:

1. What kind of methodological design/approach would be best used to investigate a complex environment such as the HE (in an FE context) classroom?
2. How do teachers experience monitoring and accountability when teaching HE (in an FE context) and what has that meant for learning teaching and assessment?
3. Can different teaching and assessment approaches be applied to create a positive change in the HE in FE environment?

4. Can a revised pedagogic approach be developed to encourage deeper learning and understanding of topics in the HE (in an FE context) classroom?

5. What is the impact of a revised approach to pedagogy on student learning when teaching HE (in an FE context)?

The findings during the investigatory stage of the study were used to help inform actions that contributed towards addressing the research questions, and create a more positive environment. The research was context driven so the focus was on ways of improving the pedagogic environment within the engineering classroom. Therefore, research questions 1 and 2 were designed to gain an awareness of the current situation within the HE classroom and develop an understanding of the foundation for change. Research question 3 is critical for my study and was answered at the end of the process. Research questions 4 and 5 were focused on bringing about that change into the classroom in a positive way, once again, with research question 3 indicating as to whether they met the aims of the study.

3.2 Research paradigm

Paradigms are very different in the way they allow the researcher to view the world around them and in turn influence the way the research will be conducted (Thomas, 2013). Morgan (2007) interpreted Kuhn's (1996) idea of paradigms as 'shared beliefs within a community of researchers who share a consensus about which methods are the most appropriate' for a particular social context (Morgan, 2007: 53). To enable the collection, interpretation, evaluation and synthesis of information effectively in an endeavour to gain insight into my area of study, I needed to employ a philosophical stance that would shape the way the study is researched and compiled (Coleman and Briggs, 2007).

From a philosophical perspective, the paradigm of pragmatism was chosen as it brings together post-positivism, in which there is a belief that the world exists regardless of our understanding of it, and constructivism, which argues that the world exists through our conceptions of it (Morgan, 2014). Therefore, a pragmatic stance can reduce the dualism between conceptually opposed positions such as realism and idealism (Morgan, 2014). However, that does not mean that the world can be anything we want it to be to suit our own means, but, as Dewey (2008) believed,

when closely related to ontology, the nature of our world or our conceptions of it are merely discussions based on two sides of the same coin.

3.3 Ontological and epistemological positions

The ontological position taken to conduct my research was from a metaphysical realist and idealist perspective. By adopting a metaphysical realist position, I accept objects and events for what they are independently of thought and theories (Rescher, 2003). Their properties and relationships with each other would also be accepted as part of the nature of the world regardless of our knowledge of their existence (Khlentzos, 2011). An idealist metaphysical approach would complement the realist stance by contending that objects and events that are experienced are incorporeal and are therefore a 'phenomenon of the brain' (Schopenhaur, 1966:15-16) that requires thought and reflection to help shape my interpretation of events. Due to the potential complexity of the study, this ontological approach allowed the freedom to be fluid in determining what and how the reality is within the HE classroom.

For the study I needed to learn the current pedagogic practices used in the HE classroom and discover how performativity measures resulting from the marketisation of the sector influenced them. Therefore, the ontological position of realism serves that purpose well, placing the focus on the actual learning and teaching practices being conducted at any given time. It was also necessary to consider possible alternative pedagogic approaches that could contribute towards positive change within the HE classroom. For this, the ontological approach of idealism allowed for potential conceptual solutions that could, following analysis of the data, be considered and applied in reality to trial new ideas for learning and teaching approaches.

Given that I was going to be using an emergent process, which may result in changes in direction in terms of the nature of the knowledge acquired and the understanding of the knowledge, an epistemological stance of pragmatism was adopted. As a pragmatist, an ideology could only be considered true if thoughts and beliefs were verified by generating practical and concrete consequences (Gray, 2014; Howell, 2013). Therefore, questions cannot be based on theory alone, there needs to be an element of practical experience to support it (Dewey, 1950). In many

respects, the renewed popularity of pragmatism is partly because it provides an epistemological justification to a mixed-methods approach to research (Onwuegbuzie et al., 2009).

3.4 Methodology

Creating a methodology that is not focused on the search for an eternal truth but uses a pragmatic approach that develops ideas through practical actions proved to be most effective for this study (Reed, 2007). Pragmatism demands that participants engage in an experience through praxis, rather than reading the theory (Rorty, 1989), thus participants are actively engaged in the study through their actions. Freire (1972) defined praxis as:

> …. reflection – true reflection – leads to action…. When the situation calls for action, that action will constitute an authentic praxis only if its consequences become the object of critical reflection.

> Freire (1972: 41)

Within my study, the AR cycles demanded reflection of any actions taken to develop pedagogic practice. Thus, through the methods I used, which included discussions with colleagues and students, I tried to ensure some questions encouraged all participants to reflect on and evaluate actions and possible consequences of these actions for all concerned, or 'authentic praxis' as defined by Freire (1972). By creating a methodology that involves a number of different participants working together towards a shared goal/objective through interactions, shared experiences and discussions, the benefits associated with social constructivism are clear (McNamee, 2003).

The main focus of the study is the development of a new approach to pedagogy in HE, and in doing this, a prolonged set of interventions were necessary to work with the HE Engineering teachers to develop an alternative approach based on the theoretical insights from the models in chapter 2. This led me to use both an AR and an AI model together. Both models share core characteristics, particularly the way knowledge (experiences), theory and practise are brought together to create outcomes that leads to improvement in some way.

3.4.1 Action Research (AR)

Action research (AR) is a mode of inquiry that allows people to investigate and evaluate a particular area of interest by practical means. It should ask the following questions, 'what am I doing? Do I need to improve anything? If so, what? How do I improve it? Why should I improve it?' (McNiff, 2017: 9). Therefore, teachers consider their practice, reflect on how effective it is, how it could be done better, and the impact such a change would have on themselves and others (Coghlan and Brannick, 2014; McNiff, 2017). Shani and Pasmore (2010) offer the following definition:

> Action research may be defined as an emergent inquiry process in which applied behavioural science knowledge is integrated with existing organizational knowledge and applied to solve real organizational problems. It is simultaneously concerned with bringing about change in organizations, in developing self-help competencies in organizational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in the spirit of collaboration and co-inquiry.

> (Shani and Pasmore, 2010: 439)

Shani and Pasmore (2010) describe an AR process that seems to be an ideal methodological approach for this study to develop, trial and evaluate the effectiveness of theoretical and practical changes incorporated into the HE classroom to support the structure of the practical work, thus reflecting the nature of pragmatism. All changes must be based on the knowledge accumulated and analysed throughout the research process of improving pedagogic practice in the HE classroom. The iterative nature of the AR approach allows the research to go through a number of sequences (on more than one occasion if necessary) to achieve a desired aim (Townsend, 2013). Because of the complex nature of the potential changes involved, there is not necessarily a predictable process of what may happen. However, for my study, AR was used to encourage students and teachers to collaborate and engage in the process, reflect on the consequences of their actions and the feedback to plan further actions (Chevalier and Buckles, 2013; Lykes and Mallona, 2008). The great advantage of conducting AR over other forms of

inquiry is that practitioners can research their own practises with other colleagues and researchers to instigate change (McNiff, 2017).

AR is a process that can be used by researchers from a host of different scientific and vocational disciplines and with very different philosophical standpoints (Waterman et al., 2001). The Sustainable Health Action Research Programme categorised AR into 3 types (Whitelaw et al., 2003: 21):

1. <u>Technical, Scientific and Positivist Action Research</u> is more of a traditional scientific approach which tests particular interventions or hypothesis. It relies on data collection and analysis, so I, as the researcher, need to distance myself from the action itself so as not to affect it (Whitelaw et al., 2003). If I am unable to fully distance myself, there is a risk of 'subversion bias', which occurs when researchers consciously or subconsciously select specific participants with distinct characteristics into a particular group and/or when the allocation sequence of the research/trials are made known to the researcher in advance (Torgerson and Torgerson, 2003: 41). Trials in which such disclosure has occurred, have shown the resulting effect sizes are exaggerated compared to those where the participating groups were randomised and the sequence concealed from the researcher (Schulz et al., 1995). I believe that for this study, this type of action research would be too narrowly focused on specific phenomena, without considering external factors that may affect and contribute to the knowledge that I may gather.

2. <u>Critical and Emancipatory Action Research</u> can be seen 'as an explicit vehicle for political and critical expression' (Grundy, 1987:154). It takes the stance that individuals within an organisation perceive reality based on distorted ideological forces that are imposed upon them (Whitelaw et al., 2003). Therefore, as a researcher, I would use this approach to challenge power relations between individuals and the organisations in which they work, focusing on emancipation, empowerment and the rebalancing of power (Kemmis, 2001). Although there could be an emancipatory aspect to my study, I do not intend to challenge the power relations created by government policies but create positive change within the environment.

3. <u>Mutual-Collaborative and Interpretivist Action Research</u> is a pragmatic and functional type of action research which involves researchers working alongside

practitioners and policy makers to identify issues and collaboratively decide on interventions to address them (Whitelaw et al., 2003). The premise is that all participants are equal in the study regardless of their position within the organisation or system (Whitelaw et al., 2003). I intend to collaborate with colleagues/teachers as part of the research process to discuss positive aspects of our learning and teaching experiences (rather than issues). They will also contribute to the actions taken, therefore from a practical perspective, this seems the best 'fit' for my study.

The original AR model by Lewin (1946) involved 3 stages in a cyclical process (see figure 3.1), which was based on planning, acting on the plan, and finally fact finding based on the results obtained from the actions of the plan (Townsend, 2013). A series of cycles can be conducted and involves an iterative approach using the results generated from a previous cycle to inform the action for the next cycle. Lewin's basic AR model was developed further by Kemmis and McTaggart (1982) who expanded the fact-finding aspect into two separate stages - observation and reflection of the plan (see figure 3.2).

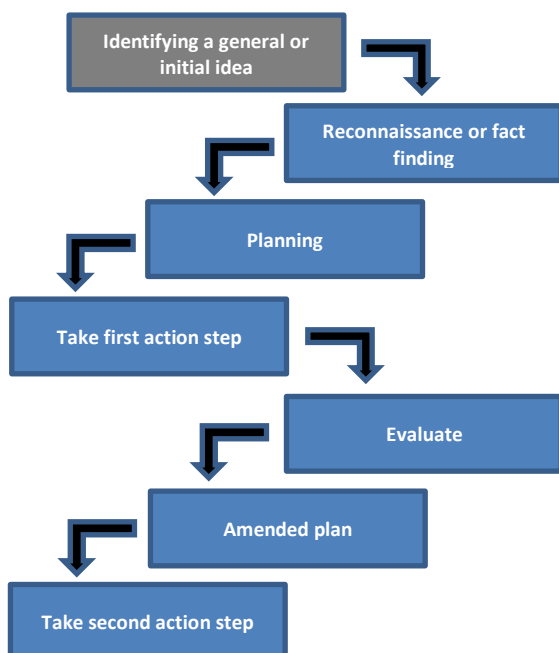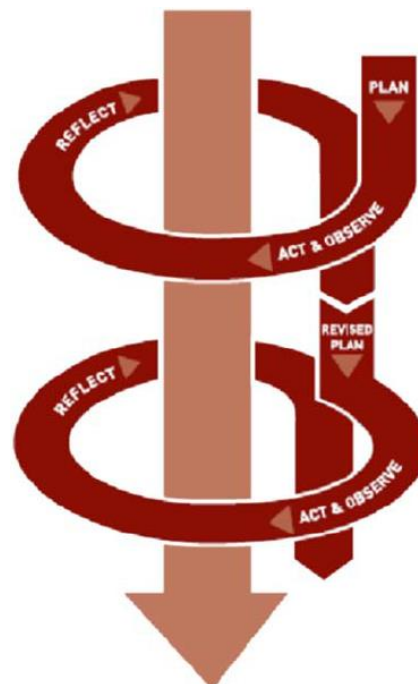figure 3.1 – adapted from Lewin's AR model (1946)

figure 3.2 – Kemmis and McTaggart's AR model (1982)

Reflection takes place before a new cycle begins. Although the model can seem simplistic, it represents a process that underpins a committed approach to inquiry and problem solving. As McTaggart (1994) stated:

> It is of course a mistake to think that slavishly following the 'action research spiral' constitutes 'doing action research'. Action research is not a 'method' or 'procedure' but a series of commitments to observe and problematise through practice the principles for conducting social inquiry.

(McTaggart, 1994: 315)

For the study I decided to use a 6 stage extended action research model by Townsend (2010) (see table 3.1).

table 3.1 - <u>Townsend's extended model of action research (Townsend 2010: 141)</u>

Extended model of action research	
Stage	**Key activities**
1. Refining a focus	This initial phase involves a period of reflection, dialogue (especially if action research is being conducted as part of a collective) and consultation to identify a potential focus for change.
2. Conducting reconnaissance	A phase during which the focus is refined and developed and potential actions clarified. The intention of this phase is to further clarify, and possibly refine, the focus articulated in stage 1. It also helps to understand what is already happening in relation to this focus, both within and beyond the immediate focus for action.
3. Reflecting on progress	This aspect is intended to build on the reconnaissance to consolidate what has been learnt. This is not just a stage of itemising the outcomes of reconnaissance, but rather should be an interrogation of the initial focus and identifying how what has been learnt from reconnaissance relates to those initial aspirations. This might include deciding that the initial focus was in some way inappropriate.
4. Planning for action	Having established the outcomes of reconnaissance, the next stage is to identify appropriate actions. Although intended to be actions which address the overall focus, this could include a second reconnaissance phase. This could be appropriate if the focus is refined, or developed, or is now judged to be inappropriate. However, the aspirations of this stage fit into three main themes: 1. What actions should now be taken? 2. How can the outcomes of these actions be observed? 3. How should the action steps proceed, including asking who else should be involved and in what ways?
5. Implementing and observing action	This is the stage at which actions are introduced. Note that this is not the first thing that happens in the action research process but arises from a process of reflection and reconnaissance. While the emphasis on this stage is concerned with the implementation of an action plan, two forms of observation are also carried out: observing the progress of implementation and the immediate effect of actions. Please also note that in this extended model the observing and action stages that are separate in above cycles are combined.

6. Reflecting and evaluating change	The final stage is an opportunity to pause, take stock and ask: what has changed? In one respect this can involve a formal phase of evaluation but is also likely to involve a period of reflection on the original purposes of the action research, and to ask not only whether they have been addressed, but also whether they and the initial perceptions have changed. The intention is that this will then lead back to step 1 and the clarification of a revised focus.

Although this model has a clear set of stages, Townsend makes it clear that each stage can be overlapping, making them more of a guide for a complex process (Townsend, 2010, 2013). There is a reconnaissance stage (2) which is essential for ensuring the context of the actions are understood early on. Whilst this is an explicit element, further reflection takes place throughout the process. An important aspect of this model is that if data or information gathered during a particular 'cycle' does not fully address its purpose, following reflection, the stage can be repeated to ensure that sufficient evidence is collected for analysis before moving on to the next stage (Townsend, 2010).

Whilst AR has become a popular approach for practice development and change, as demonstrated by Townsend (2010), Cooperrider and Srivastva (1987) challenged the apparent nature of AR as only being used to solve something that appeared to be a problem. They proposed an alternative approach to AR that focuses on what is already effective and successful, and which can then be built upon. Such an approach creates conditions for collaborative and generative thinking and solutions through a process known as Appreciative Inquiry (Bushe, 2012).

For the purpose of this study where the focus was to create a positive change, be it organisational, operational or practically, using AI led to further opportunities to discover ways of creating positive change in HE pedagogies. Participants were encouraged to look at their pedagogic practises in the classroom from a positive, rather than negative perspective, therefore they were more inclined to engage with the process to create a positive outcome. Consequently, by focusing the study on generating positive, sustainable change for learning and teaching of HE in FE, teachers had a voice and an opportunity to collaborate and affect genuine positive change.

Based on the foundations of my epistemological position of pragmatism, in which actions are taken to generate practical consequences (Goldkuhl, 2012), AI seemed an appropriate approach to the study. Like AR, AI is an emergent inquiry process

that encourages change through practical interventions, and also requires a positive point of focus in an area of potential discord and anger. Using AI and AR together seems appropriate to address research questions 2 to 5; engaging with teachers to find out what is done well in the HE classroom (Whitney and Trosten-Bloom, 2003), and highlight positive experiences encountered by the students. The data collected from such interactions would then be used to inform research questions 3 to 5.

3.4.2 Appreciative Inquiry (AI)

AI is a methodology that imagines procedures and structures working at their best. It engages in dialogue and raises positive questions based on successes, dreams, hopes and aspirations to explore the best approach to organisational change (Kelm, 2011; Whitney and Trosten-Bloom, 2003). AI is a collaborative and participatory process and views dialogue as an important and fundamental aspect of social reality. This is achieved using techniques such as discussion and more formal use of interviews (Whitney and Trosten-Bloom, 2003). By using an AI approach, I was able to identify ways in which practice can be transformed for the better.

The 4 key concepts of AI are:

- Positive core
- 5 Principles
- 4D Cycle
- AI Summit

(Whitney and Trosten-Bloom, 2003)

The Positive core imagines that regardless of how bad or dysfunctional an organisation may seem, and how gloomy the future may look, there will always be a positive core. The positive aspects in relation to this study may include the strengths of the institution or curriculum area or best practices and successes that have been achieved. It is from such positive cores that I can focus the study to facilitate change.

The 5 Principles are the theoretical foundations of AI. The principles that follow are the original principles developed for AI by Srivasta and Cooperrider (1990). In recent years, additional principles have been added by other researchers in the field based

on the experience of using AI in larger organisations (Whitney and Trosten-Bloom, 2003):

1. *Constructionist Principle* - This represents the construction of stories in relation to what happens in an organisation or environment at a particular moment in time. It is important to emphasise that these stories are not simple recordings of a phenomenon or event, but an interpretation of them by both the participant and then by myself as the researcher (Reed, 2007). I accept that people interpret events differently and from different perspectives, therefore 'truths', or my interpretation of what I believe the 'truth' to be, will have to be established by the researcher (Kelm, 2011), so it may be necessary to speak to some participants again to clarify points and meaning. An element of reflection will be required on my part to consider what has been learnt so that I can interpret this knowledge without imposing my personal view (reflexivity).

2. *Poetic Principle* – The stories people tell about their organisations or environments, as part of the 'Constructionist Principle', are in many respects like poetry - we are able to interpret whatever meaning we choose, be it positive or negative. By focusing only on the positive, the stories become more significant and important to the story teller (Whitney and Trosten-Bloom, 2003). Thus, in relation to key research questions 2 and 3 of my study, the focus was on the 'good' aspects of the teachers' lessons in relation to learning and teaching. This was based on the responses from the participating teachers and students.

3. *Simultaneity Principle* – This is the belief that when a question is asked, it intrinsically links to an action, triggering ideas on how the question can be answered and resolved (Goldberg, 1998). Therefore, the question posed must be carefully chosen as it becomes a powerful tool for change that stimulates reflection which leads to new ideas and approaches to processes and practice (Reed, 2007). The question has the potential to set the direction for the development process and the actions taken to achieve the 'Destiny' (Kelm, 2011).

4. *Anticipatory Principle* – The way people view the future will shape the way they move towards it (Reed, 2007). It is important that the focus for the future is viewed through a lens of optimism and possibilities (positive core). If the vision is portrayed as dismal and uninviting, it is difficult to get anyone motivated to do

anything to improve it, which is why the focus of the study is always positive (Reed, 2007). In addressing research questions 2 and 3 in my study, by asking students and teachers to describe their ideal lesson in relation to learning and teaching, they gave a positive vision for improving what was happening at the time in order to instigate potential future changes.

5. *Positive Principle* – This principle states that by focusing on the positive core and positive questions, we become energised to engage in positive change more deeply than we would otherwise for a longer period of time (Kelm, 2011; Reed, 2007; Bushe and Coetzer, 1995). Therefore, it is important that when collecting data during the 'Discovery' and 'Dream' phases of the AI process, I will try to keep the participants' focus away from any negative aspects (Whitney and Trosten-Bloom, 2003).

The 4-D Cycle represents a cyclical process undertaken to discover and improve upon all the positive attributes and strengths of an organisation, and is designed with a positive core at its heart (see figure 3.3).

figure 3.3 - The 4D Cycle adapted from Whitney and Trosten-Bloom (2003)

Centred around a positive core of good experiences and practices, the process begins with a 'Discovery' phase in which the participants are interviewed and asked

to reveal what they consider to be the positive aspects of their organisation or environment to highlight its strengths, best practices and successes. The process of obtaining information, ideally through interviews, is an essential aspect of the AI process, as such dialogue allows the voices of the participants to be heard and offers an opportunity for their views and feelings to be expressed (Whitney and Trosten-Bloom, 2003). This phase encourages the participants to highlight their positive experiences and the strengths and best practices of their organisations that emphasise its 'distinctive strengths and potentials,' that offer 'positive possibilities for the future' (Whitney and Trosten-Bloom, 2003: 147). Although, I accept that to some participants, asking them to dream big can be challenging, knowing that it is just a dream. However, it is important that I stress, throughout the phase that the aspiration for the study is to go some way in trying to achieve such dreams.

The 'Dream' phase encourages all the participants to discuss what was learned during the 'Discovery' phase and imagine how the positive experiences and practices would look if they could be further improved. This is achieved by asking questions about people's dreams and aspirations for the future of their organisation. The dream can be creative and the ideas as big as the participants wish in order to achieve their utopian ideal (Reed, 2007). The participants are challenged to think beyond the accepted status quo and consider any possibility, no matter how ambitious or difficult it may be to achieve. As a result, they will be naturally drawn towards the next phase where focus is firmly on finding solutions (Whitney and Trosten-Bloom, 2003).

The 'Design' phase involves bringing many of the hopes and dreams from the previous phase to life. Initially, the most useful ideas/topics are selected and actions developed to realise them. The ideas that are chosen should be:

> anything related to organisational effectiveness…. They can include technical processes, human dynamics, customer relations, cultural themes, values, external trends, market forces, and so on.

> (Cooperrider et al., 2003: 37)

Although there may a vast range of topics that can be explored, Cooperrider et al. (2003) suggest restricting the number from 5 to 3, with the ideas sharing the following characteristics:

1. They are affirmative or stated positively.
2. They are what the participants want.
3. They move in the direction that the participants want to go.

(Reed, 2007; Cooperrider et al., 2003)

Once the topics are decided, possible approaches (actions) need to be taken that will move the topics highlighted in the 'discovery' phase to the aspirations identified in the 'dream' phase. Although there are various approaches that could be taken to address this, I decided that AR may bring a structured methodological approach to the whole process and enable me to question teachers and students following each action to get differing perspectives on their experiences. However, such actions may require the teachers to trial approaches/methods that are outside of their normal comfort zone and may challenge their beliefs on what they would normally consider effective practice in the classroom. In such circumstances, it is important that I do not allow the teachers to lose confidence and fall into a 'doom-loop'.

The doom-loop

The doom-loop is a term used by Argyris (1991) in his paper 'Teaching Smart People How to Learn', which describes how professionals or experts (teachers in this case) go into a particular state of mind when criticised or challenged for something they do. Experts are normally working in what Argyris (1991) refers to as a 'closed loop' in which they are appreciated for their knowledge in their field and are constantly praised for their performances. However, within such a closed loop, their 'defensive reasoning are never really tested', as they become 'imperious to conflicting points of view' (8). Experts, and especially those particularly specialized in a field, are often familiar to success and not being challenged. Therefore, when they are challenged, they can find it hard to cope with. Such an occurrence could be when asked to measure their actions/attributes against a set of standards or a performance evaluation. It is at this point when they fall into the doom-loop, which is 'a sense of despair in the absence of praise' (Feather and McDermott, 2014: 172). Therefore, to

avoid this occurring with the teachers during this study where they are required to make changes to their own practice to achieve certain outcomes, they need to be open to a degree of criticism and uncertainty in their own performance. The teachers need to be assured that such anxiety is appropriate and not a reflection on their expertise (Schein, 1999; Feather and McDermott, 2014). It is equally important that the teachers are offered praise for their ideas, actions and involvement in the study (Blanchard and Johnson, 2004).

Following the actions that are taken as part of the 'Design' phase, the 4D cycle moves to the 'Destiny' phase in which there is reflection of what was done during the 'design' phase, and evaluation of the objectives and whether they were achieved (Cooperrider et al., 2003; Whitney and Trosten-Bloom, 2003). This phase of the AI process is three dimensional. Firstly, questions are raised on what was learned during the process, and what improvements were made that had a positive effect on the participants and organisation? Secondly, who was involved in trying to achieve the objectives and how did they work together to achieve an agreed goal? Thirdly, how did all of the participants contribute towards the application of AI to achieve positive change within the institutional environment? Therefore, were the changes achieved? And why or why were they not achieved as a result of the process? (Cooperrider et al., 2003; Whitney and Trosten-Bloom, 2003).

Although AI is a process designed to focus on the positive aspects of an environment, I had reservations about using it as a single model for the study. The HE classroom is a complex environment that potentially has many strands or lines of inquiry. This can be due to many factors that may include policy and organisational variables. Therefore, as mentioned earlier, the use of AR as part of the process seemed to be an appropriate method.

3.5 Tailoring the research design for the study

AI and AR have already been identified as two very similar approaches that have the potential to work effectively together once the stages/phases of each approach have been correctly coordinated. I brought these two methodologies together to create, 'The Appreciative Action Research Model' (AARM) that was designed to suit this study (see figure 3.4).

figure 3.4 - <u>The Appreciative Action Research Model (AARM)</u>

Phase 1	**Appreciative Inquiry –Discovery** An appreciation of what is good at present

Phase 2	**Appreciative Inquiry – Dream** What would it be like in a utopian world?

Phase 3	**Appreciative Inquiry – Design** What needs to be done to achieve utopia?

Depending on the research being undertaken, multiple action research cycles can be conducted during this phase to achieve the study's destiny.	**Action Research – stage 1** Refining the focus
	Action Research – stage 2 Conducting Reconnaissance
	Action Research – stage 3 Reflecting on progress
	Action Research – stage 4 Planning for action
	Action Research – stage 5 Implementing and observation
	Action Research – stage 6 Reflection and evaluation

Phase 4	**Appreciative Inquiry – Destiny** **The creation of the utopian ideal**

At a strategic level, AI is the overarching approach for my research with Townsend's AR model used to offer a pragmatic approach to operationalise the actions/changes. With the completion of each AR cycle, the data was analysed, reflected upon and used to inform the focus of the next action research cycle and the most appropriate data collection methods that would be used.

<u>How the model relates to the research in a practical timeline</u>

I now offer a practical timeline based on the planning that I did initially, developing a Gantt chart of the key events of the research (see Appendix 1). A pilot study was

conducted from January to March 2015 (10 weeks) based on the learning and teaching experiences of 4 students and 2 teachers at the college (see chapter 4 for more detail). As a result, a Two-Stage Emergent Learning and Teaching Model was developed. This model was used as the baseline for the main study and trialled with the students participating for the main study. Their views of the learning and teaching experience was the focus for phase 1 ('Discovery') and phase 2 ('Dream') of the AARM.

Phase 1 – AI – Discovery

The intention was to conduct a group meeting with the participating teachers and to use questionnaires with the participating students (for logistical reasons and time constraints) to allow a discussion on aspects of the HE classroom that are 'good' (this could be interesting, enjoyable or effective in helping the learning and teaching process). These aspects could range from pedagogic practice to the learning environment. During this 'discovery' process, if applicable, we could share examples of best practice and discuss any actions that have already been taken to change practice for the better (Whitney and Trosten-Bloom, 2003).

Phase 2 – AI – Dream

This phase was conducted during the same meeting with the participating teachers and through the questionnaire given to the participating students. This time the participants were asked to give their thoughts on what pedagogic practice would look like in the Utopian classroom where effective learning and teaching takes place.

Phase 3 – AI – Design (AR Cycle)

Townsend's 6 stage action research model (Townsend, 2010) was used to operationalise the Design process. The action or actions that were the focus of this stage were based on the data collected and analysed from the Discovery and Dream phases of the Appreciative inquiry.

Phase 4 – AI – Destiny

As a result of the data collected from the Discovery and Dream phases of the AI and the actions that were undertaken to generate a more positive learning environment during the Design phase, the result was reported in this phase.

3.6 Methods of data collection

A range of data collection methods were used during the study which were dependent on the lines of inquiry that followed during each cycle of the process. This study was an emergent process of discovery, therefore, methods of data collection that had the potential to extract the most relevant and important information for each stage of the process were chosen, within certain parameters. Initially, I intended to conduct regular individual interviews with both students and teachers to extract their opinions and experiences of their educational experiences for the 'Discovery' and 'Dream' stages of the AI, and to capture their reflections on the effectiveness of the actions taken during the 'Design' stage. However, due to a number of factors, such as: the number of participating students and lack of time available to meet with them and the demands on the teachers' time and timetabling issues, the students' views and reflections were generally captured using questionnaires, and the teachers' views using semi-structured and unstructured group interviews (generally conducted early in the morning before going to class), which were recorded and transcribed.

Q methodology was given consideration for this study because it is designed to extract peoples' subjectivity on topics, and thus their views, opinions, beliefs and values (Coogan and Herrington, 2011; Cross, 2005). Q methodology involves collating a number of statements about a topic from a range of sources and asking participants to 'rank-order' the statements based on each individual participant's strength of attitude towards these statements (Cross, 2005). Although valuable for certain studies, for my research, a more immediate and focused response based on specific actions was more useful and appropriate, particularly due to the time constraints imposed on the students involved.

Questionnaires

Due to the number of participants and logistical constraints, students were given questionnaires because these could be completed by the students at a time convenient to them (Gillham, 2007). However, it was important to ensure that the questions asked were as clear and unambiguous as possible, so as not to be misinterpreted (Thomas, 2017). Whenever I deemed it necessary, I met with the students first to explain exactly what was being asked. In the case of the first questionnaire where I wanted to discover the students' teaching preferences, I

clarified the definitions for the different teaching approaches. The questions were based around their learning and teaching experiences throughout the study and were open to encourage as broad and detailed an answer as possible, allowing the respondent to express their views in a way in which they were comfortable (Thomas, 2013). For the purpose of this study and the need for views and experiences to be articulated freely, closed-questioning would not suffice. The advantage of using questionnaires from a reflexivity and positionality perspective is that they remove potential interviewer bias (Gillham, 2007).

<u>The protocol used for questionnaires</u>

The protocol that I followed when designing, editing and issuing questionnaires for the study involved a set of procedures. The design of the questions involves considerable thought to ensure that they serve their purpose for the study (ie extract the desired data) and need to be focused, and clear, avoiding any trace of potential ambiguity and misunderstanding on the part of the participants. This could involve many drafts and/or edits before I would be satisfied that they would be fit for purpose.

For the initial questions for the 'Discovery' and 'Dream' phases of the study I initially started with a number of potential questions. However, after considerable reflection, I felt that they were too broad and were also asking too much of the participants to reflect upon and try to explain, which I thought would be open to too much interpretation (see Appendix 2). Therefore, I trimmed the questions to just three for the final version, that were very specific and addressed the 'Discovery' and 'Dream' phases of the AI more succinctly and were less susceptible to interpretation (see Appendix 3). All questions were checked by an expert (Dr Phil Wood) before issue. No piloting of the questionnaires took place during this study.

Prior to issuing the questionnaires, the most convenient times for when the questionnaires could be completed (generally during a lesson) was discussed with the teachers. Considerations discussed were based around the lessons when most of the participating students are together, and possibly lessons where the students were about to start a new topic, to avoid disruption to their learning. All students were informed in advance which session was to be used to conduct the questionnaires and the 'theme' of the questioning (ie learning preferences).

During the sessions in which the participants completed the questionnaires, they were to be informed of; the time allocated for the session; if unclear about any of the questions to ask the teacher to clarify; reminded of their right to withdraw from the study if they desired. All sessions in which questionnaires were issued would be overseen by a participating teacher and not myself as the researcher, to ensure that I maintain a degree of positionality and reflexivity.

Once the questionnaires are completed, they would be returned to me for analysis. It would then be a process of analysing the answers to the questions to identify points of interest and themes, which would generate data for me to consider the actions for the study.

<u>Structured Interviews</u>

Structured interviews involve a meeting between two parties in which a predetermined set of questions are answered, but such interviews do not offer much scope for pursuing points of interest during the interview or any follow-up. Such an approach creates a very narrow field for responses but may make data analysis more straightforward because the questions are very specific. However, for this study I needed answers that could offer as much scope and breadth as possible.

<u>Semi-structured interviews</u>

Semi-structured interviews were used as I was able to select a number of questions that were important for knowledge and data collection. However, I also had the freedom to follow-up on points of interest and probe for more information if required. This approach was ideal for the 'Discovery' and 'Dream' stages of the research along with the reconnaissance for cycle 3 or the AR. All of the teacher interviews were carried out as a group rather than individually, as semi-structured interviews can be time consuming and I was conscious that I was asking the teachers to give up their time when they had other demands to meet. Although I had a set of questions that I wanted to ask, the nature of open questions gave the participants freedom to express their answers in ways that suited them. At the same time, open questions can also offered the participants the opportunity to follow a train of thought, which resulted in richer and more detailed responses. I also used the time to clarify, probe for deeper explanations and follow-up points of interest. Therefore, the advantages

of group interviews are that they are less time consuming and tend to encourage everyone to contribute (Gray, 2018).

The initial semi-structured group interview with the teachers at the start of the AARM were based around two affirmative topics to ensure they focused on specific areas that helped generate data for the 'Discovery' and 'Dream' stages. I used a 'lead-in' statement to introduce each affirmative topic to create a more positive mind-set among the teachers which set the tone for their responses (Whitney and Trosten-Bloom, 2003). The sub-questions that followed were designed to extract positive responses, reflections and thoughts from the interviewees.

For the initial draft of the affirmative questions, I felt that aspects of it were not as clear and focused as they could be. The normal procedure that I follow is to annotate the draft, offering thoughts and suggestions on how the questions could be improved (see Appendix 4). After editing and re-drafting, I would seek approval from an expert, generally my supervisor, Dr Phil Wood, to ensure that they were not leading in any way and addressed the relevant research questions. Once both myself and Dr Wood were in agreement that the focus and wording of the questions were correct, I would incorporate them into the final version of the interview questions (see Appendix 5). No piloting of the interview questions took place during this study due to lack of time.

Unstructured interviews have no questions prepared in advance nor a predetermined structure. Such interviews suggest a more conversational approach based on a particular theme. However, it is important that during such interviews, if the discussion moves too far away from the focus, the researcher needs to carefully lead the interviewee back without appearing to dictate the focus of conversation. The researcher also needs to be sensitive to the fact that such a diverse route from the topic could be the way a particular person likes to explain things. The advantage I had with the participating teachers involved in this study was that I knew them, and how they engaged with each other and participated in conversation and discussion. Therefore, I believed unstructured interviews would be effective to use with the teachers.

Unstructured interviews can, by their nature, be more time consuming to analyse and require a high degree of interpretation as the dialogue is not framed by a specific question. It is also important that the researcher has interpreted what the interviewee

has said correctly, so this may need to be checked by summarising or restating the responses (Thomas, 2017). Unstructured interviews were used to good effect with the teachers when reflecting on actions during the AR, especially for cycles 1 and 2.

In group interviews, participants may respond differently to how they would if interviewed individually. There is also the potential of what psychologists call 'risky shift phenomenon,' (Thomas, 2017) where, as a collective, people are more likely to offer riskier responses as a result of sharing the responsibility. However, I believe that the participants knew each other well enough for that not to be an issue. In fact, such a 'safety in numbers' approach was probably useful in encouraging the less vocal participants to engage in the conversation and feel more comfortable to express their views, as became apparent with Sarah. It was noticeable that in the early group discussions, Sarah generally let other members of the team express their views before contributing herself. In the later stages, she was more comfortable to lead the conversation.

The interview protocol used for the study

The protocol that I followed for the interviews throughout the study followed the same procedure and were similar to that used for the questionnaires. I designed a set of interview questions that I believed would address the necessary areas of interest/research questions for a particular point in the study. This would often take the form of several drafts and/or edits before I was satisfied that they would be fit for purpose.

Prior to the interview, times and dates were arranged between myself and the participating teachers. Once a time and date was agreed, confirmation would be sent via email along with a request for permission to record the interviews. The purpose of the study and the reason for the participants' involvement would be made clear and reiterated throughout the study.

During the interviews I ensure that the digital recorders were working (I generally used two in case of malfunction with one of them) and the batteries were charged. If necessary, I decided to take notes as a prompt for myself, especially if a point of interest was raised during the interview, to remind me to return to the point and probe further.

Following the interview, I typed the transcripts and sent the relevant sections to the individual participants to confirm that it was accurate or amend accordingly. Once complete, I saved the transcript in a secure file and erased the recording. It was then a process of analysing the transcripts, and identifying points of interest and themes. Following analysis of the data I was then able to consider the actions for the study.

Other methods of data collection used

Observations are a valuable method for data collection as they are good for collating a wide range of data in a small period of time (Thomas, 2013). This was especially useful for the teachers to see how the students were responding to the changes in the classroom during the AR cycles.

Due to the emergent nature of this study, I suggested the teachers may want to consider keeping a research diary or notebook to log their feelings and impressions of the classroom environment as the research progressed and actions were trialled (Denscombe, 2003; Silverman, 2000). A diary or notebook also allows the teachers to highlight any changes in their thoughts and perceptions (McKernan, 1991). The diaries were only used as an aide memoir for the teachers with the content kept confidential to them.

For cycle 2 of the AR, quantitative data was used to support the qualitative data collection through a summary table highlighting the reduction in referral rates (see table 4.9 and 4.10). The inclusion of such data helped to support the responses from the students and teachers and create a degree of triangulation.

Audio capture

To ensure that the group interviews and discussions were captured, they were recorded onto a digital recorder (with the permission of the participants) and then transcribed from the recordings. This ensured that an accurate account of the information was collated. I analysed the data analysis from the interview transcripts. In addition, I, as the researcher, was present at all of the interviews and discussions, so was able to observe any particular degrees of expression (such as passion, frustration, joy or anger) that would not necessarily be evident in the transcripts alone. On most occasions, I used two digital recorders in case there was a failure with one.

3.7 Validity and Reliability of the study

To ensure the validity of the study, it is necessary that measures are taken to ensure that selection bias is minimised so as not to affect the outcomes (Torgerson and Torgerson, 2003). For my study, the participating teachers were chosen because they were the only members of staff who taught on the selected HE programme during the period of this study. Additionally, the participating students were the only students enrolled and studying on the selected HE programme. From the perspective of internal validity, all the students selected had similar entry profiles (ie level 3 qualifications in engineering). As the focus for my study is on the learning experience of the students themselves and not group comparisons, 'chance bias' (the differences in abilities, skills, etc that can occur by chance between groups) is not a factor. In addition, the groups selected for the study were not given different treatments that could be compared or measured against each other, which eliminates the risk of 'subversion bias', which occurs when researchers consciously or subconsciously select specific participants with distinct characteristics into a particular group (Torgerson and Torgerson, 2003). For these reasons, the internal validity of the study is strong.

An advantage of the study focusing on all the individual participants rather than different groups is that any loss of participants that may occur during its duration will not cause an 'attrition bias'. For example, if the study was comparing the results of the learning experiences between two groups taught in the classroom using different approaches, and a large number of participants had been lost from one of the groups, a distortion in the data could occur, which would affect the validity of the study.

Designing the study to identify the effects of marketisation in the HE classroom required the involvement of teachers and students to share their experiences and opinions to find practical solutions to address the focus of the study in a positive manner. I needed to engage in dialogue with the participants through a combination of interviews and questionnaires to gain knowledge and data and to corroborate their views and opinions. During the interview process and when designing the questions for the questionnaires, I needed to ensure that I did not lead the participants to answer in a certain way, be it with my tone of voice, non-verbal gestures or through

the phrasing of the questions. The questions that I asked needed to be phrased and presented in as neutral a manner as possible, so as not to convey my expectations and influence the answers (Thomas, 2013). It was also imperative that any questions asked were clear and unambiguous (Gray, 2014). I also triangulated the questions by asking questions from two different perspectives to prevent any misinterpretation from the participants, for example, what do you like? What do you dislike?

Given that the participants in the study were people that I knew as colleagues and students, it was important that they acknowledged me in the role of researcher. I accepted that this may create some tension in terms of positionality, but for the study to be successful I had to believe that the participants would answer the questions honestly and not say what they thought I wanted to know. I needed to encourage this by clarifying from the outset the purpose of this study and in the careful construction of the questions I posed to them. Some participants were perhaps aware of my own personal views and beliefs related to certain areas of the study, but needed to understand that they were my views and beliefs made at a particular point in time, and they were the reason for the study, therefore they could be challenged and changed as a result of the study.

All actions taken during the AR cycles were conducted by the participating teachers after discussion, and often a final decision on the action taken was mine. I distanced myself as far as practically possible from the HE classroom to ensure that any possibility of my presence influencing the study was minimised. I accept that the instructions given to the participating teachers when conducting the 'actions' for the action research cycles were given by myself and had to be strictly adhered to, so to a degree, my influence was present, though only from an organisational position. However, it is important to note that the instructions that were given was the result of discussions that I had had with the teachers. My only direct involvement with the study was with the data that was collected which I analysed to decide upon the next direction which the study should take to address the research questions.

It was important that I was subjective when interpreting the data and I remained open-minded to consider all possibilities by avoiding making assumptions and generalisations (Thomas, 2013). Wherever possible, I needed to corroborate the literature and the experiences of the participants to support the discussion and

generate a degree of triangulation. I endeavoured to maintain consistency in the approach to the interviews to ensure that the participants' experiences were as similar as possible, although I was fully aware that they may have interpreted the experiences differently. The same consistency was expected with the way the questionnaires were conducted and presented.

3.8 Sampling

It was important that the sampled population was broad enough to ensure that it was representative of the area being studied, sufficient in size to generate enough data for analysis, yet manageable (O'Leary, 2014). Both the students and the teachers were sampled using purposive sampling. Purposive sampling is a non-probability method that allows the researcher to choose participants from a population who are best suited for the research (Black, 2010). It is particularly useful when, as is the case with this study, there are limited participants who can be involved due to the focus of the study (in this case, Engineering HNC cohorts). Therefore, purposive sampling targets specific people who fit a certain profile that generates the best data (Teddlie and Yu, 2007). For this study, purposive sampling was ideal as the focus was directed at a group of (HE in FE) students on an engineering HNC programme (Saunders et al., 2012).

The research involved 69 participants; 62 students, 6 teachers and myself as the participating researcher (see table 3.2).

table 3.2 – Participants' involvement with the study

Participants	Student cohorts	Stages involved	Teacher specialisms
23 students	All year 2 HNC	'Discovery', 'Dream' & 'Design' (cycle 1 of AR).	
39 students	21 year 1 HNC 18 year 2 HNC	'Design' (cycle 2 & 3 of AR) and 'Destiny'	
6 teachers		All stages	Alan – Mechanical Engineering & CAD Andrew – Electrical/Electronic Engineering Jasmine – Mathematics Sarah – Mathematics Sean – Mechanical engineering Paul – Aeronautical Engineering
1 Researcher (me)		All stages	

The data collection methods used and the sample size for each phase of the research is shown in table 3.3.

table 3.3 - <u>Data collection methods and sample sizes for each phase of the research</u>

AI phases	AR stages	Activity/action	Sample	Data collection
Discovery		Reflections on learning experiences with pilot model	23 students	Open-ended questionnaires
		How the effects of monitoring and accountability can be positively addressed in the classroom	5 teachers	Semi-structured group interviews
Dream		Imagine what their ideal learning experience would look like	23 students	Open-ended questionnaires
		How pedagogic practice can be changed to encourage higher order thinking skills and deeper subject knowledge	5 teachers	Semi-structured group interviews
Design	AR Cycle 1	Give views of their learning experience with the ELT model	23 students	Unstructured group interview
		Give views of their teaching experience with the ELT model	5 teachers	Unstructured group interview
	AR Cycle 2	Consider how they engage and reflect on their studies when <u>not</u> at college	39 students	Open-ended questionnaires
		Give views of their learning experience with the new ELT model	39 students	Open-ended questionnaires
		Reflections on ways the ELT model could be improved	5 teachers	Meeting/discussion (notes taken)
		Give views of their teaching experience with the new ELT model	5 teachers	Unstructured group interviews
		Collect and review assignment data	39 students	Quantitative assignment referral data
	AR Cycle 3	Views of the aspects of teaching that are demanding on time and potential solutions	5 teachers	Semi-structured group interviews
		Reflections on the new assessment and feedback approaches	39 students	Semi-structured group interviews
		Reflections on the new assessment and feedback approaches	5 teachers	Semi-structured group interviews
Destiny		Reflection of the previous phases	39 students and 5 teachers	Open-ended questionnaires and unstructured group interviews

3.9 Data analysis

Data analysis is an important part of the research process, and particularly when being used to inform actions in an AR study. An approach was needed that would make sense of what had been discovered during the research process. I wanted to use an approach that was appropriate for the methods of data collection that had been selected for this study, such as interviews and questionnaires, to bring in a level of consistency and which had the potential to synthesise different data sets (Lichtman, 2014). That is not always achieved as Hannes and Macaitis (2012) discovered after they reviewed a number of published research reports. They concluded that, '*a black box remains between what people claim to use as a synthesis approach and what is actually done in practice*' (Hannes and Macaitis, 2012: 402). After considerable thought and based on the fact that the majority of the data was qualitative, I decided upon coding to analyse the data, as this can be applied to interview transcripts and questionnaire responses.

Coding of the data

Once the data from the questionnaires and interview transcripts was available, it was important to generate codes to help create areas of foci for analysis. In qualitative data analysis, it is necessary to identify themes and patterns. A useful way of achieving this is by allocating codes to the data content to help identify common points of interest (Saldaňa, 2016).

I considered magnitude coding as a useful method to add an alphanumeric dimension to the data that would be coded (Saldaňa, 2016). Categories can be divided to create sub-codes; for example, my study asked students for their preferred method of learning. In the case of a 'lecture', there are a number of subcategories. By applying Magnitude coding, I can sub-divide their responses further into positive responses (for lectures), negative responses and neutral (lectures when used alongside other methods), therefore whether it was a strong belief or sentiment towards a particular learning preference, I was able to identify and quantify the feelings more coherently with such a qualitative notation system (Liu, 2012). However, after careful consideration, I decided that although I could apply Magnitude Coding to some of my data sets, I would not gain any significant information that add

to the findings. The focus of the questions was very much targeted at positive and negative points and not designed to identify a strength of feeling.

While I posed pre-set questions that were likely to raise common themes, I intentionally avoided using pre-set codes. Although it was possible to anticipate certain responses or themes in the participants, I wanted them to reveal themselves naturally in their responses. The questions that the participants were asked were deliberately open to allow them the freedom to answer from whatever perspective they chose. For example, the students were asked to consider teaching methods that they found to be effective in helping them learn in the HE classroom. With such a direct question, I expected answers that only related to positive teaching methods for which the question was designed. However, there were occasions when the participants also highlighted methods that they regarded as less effective in the classroom. I could have ignored these statements as they were not answering the question directly. However, they were clearly in response to the questions being asked so I made the decision to include such views as they contributed to the overall 'picture', because if the participants felt strongly enough to make the point, then it must have been a factor that had to be included as part of the dataset and taken into consideration during data analysis. Therefore, I decided to apply an emergent coding process. Some qualitative researchers consider emergent themes as a process that leads to generalised theories. However, when done correctly and with rigour, it can lead to a deep understanding of the phenomenon being investigated.

When using data from questionnaires and interviews, the questions were the primary focus, therefore, it was important that the participants understood what they were being asked. This ensured that the responses given related directly to the questions. The answers were reviewed thoroughly before being categorised and, when appropriate, split further into smaller, more specific parts (Bernard, 2011). Any answer given that related to the question, be it specifically or eluding to, was coded (by colour), themed (by name) and divided into subcategories (see figure 3.5). The participants' names have been blacked out to protect their anonymity.

figure 3.5 – <u>Example of the colour coding approach taken</u>

The themes and subcategories that emerged from the initial questions that the students were asked in relation to the 'Discovery' and 'Dream' phases of the research are shown in figure 3.6 and demonstrate how useful the subcategories were in giving context to the themes.

figure 3.6 – Themes and subcategories identified from the students' responses for question 1

Question 1 What teaching methods do you consider to be effective in helping you learn subjects and topics well? Explain your answers.	
Themes	**Subcategories**
Lecture	Code 1: Used as a combination with other methods. Code 2; Effective with note-taking. Code 3: As an effective method. Code 4: Effective if well-paced, giving time digest the information. Code 5: A less effective method.
Practical	Code 1: An effective method. Code 2: Effective when demonstrated first. Code 3: Effective to help reinforce understanding and give application. Code 4: A less effective method.
Video	Code 1: Can sometimes be helpful. Code 2: Effective to clarify points and visualise/gain understanding. Code 3: A less effective method. Code 4: Video of actual lessons is useful.
Demonstration	Code 1: Effective to clarify points and visualise/gain understanding. Code 2: Used as a combination with other methods. Code 3: In support of practical tasks.
Notes	Code 1: Effective in support of lecture. Code 2: An effective method. Code 3: A less effective method.
Practice	Code 1: Is an effective method to reinforce processes. Code 2: Is effective in developing processes and skills.
Peer Interaction	Code 1: Using groupwork to share knowledge and solve problems. Code 2: Using discussion to share ideas and talk about salient points. Code 3: Using roleplay to enable students to relate to real-life situations.

The approaches to coding, the identification of themes and the creation of sub-categories shown in figures 3.5 and 3.6 were used throughout the study for the analysis of each question on the questionnaires, and also the interviews (semi-structured and unstructured) once the recordings had been transcribed. This offered a significant amount of data to be viewed, reflected upon and considered for the actions that were taken for each stage of the AARMs cycle. There was always the opportunity to re-code or, if necessary, subdivide the categories further. However, for this study, the codes and the subcategories generated fully met the research requirements.

3.10 Positionality

I was working with others (participants) on addressing how monitoring and accountability measures affect pedagogic practice in the HE classroom. Therefore, I took a second person approach to the action research (Chandler and Torbert, 2003),

for which I was effectively an 'insider, working collaboratively with other insiders' (Herr and Anderson, 2005: 32-45), such as teachers and students.

Both the participating teachers and the students that were involved in the study are known to me. The teachers were colleagues who teach on my HE programmes, and the students were enrolled on my courses and taught by me at some point. Finally, the HE programmes that were the focus of this study were part of my responsibility as the Course Lead. Therefore, there was considerable potential for conflict in relation to my position within the study. To clarify my position and show that I had considered the political norms of the action research, it was important that I critically answered the following questions: 'Whose interest? Whose theory? Whose voice? Who says? Whose vision?' (McNiff, 2014: 25). Answering the questions also showed the type of language that was used (positivist or objectivist), which was particularly important if claiming that any knowledge gained from the research was an absolute truth (McNiff, 2014). However, before making such a claim it is wise to consider what Foucault (1980) said:

> Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true.
>
> (Foucault, 1980: 131)

According to Habermas (1976; 1987) there are three main forms of human interest that can be served with action research: 'practical, technical and emancipatory'. I addressed the practical interest by trialling processes, interpreting the data and understanding the effects on pedagogic practice in the classroom, and then I was able to make practical judgements on their effect. The theory was based on practice in the classroom and the knowledge that was gained from it following the implementation of actions. The knowledge was then used to inform the practice which in turn developed a new or modified theory. Therefore, the theory during the emergent process of action research becomes dynamic (McNiff, 2014). It is

important in action research that the participants have a voice and are allowed to speak for themselves. Although I was, as the researcher an actor in the study, I reflected on the views and experiences of the participating teachers and students (McNiff, 2014). I did not contribute to the dialogue or conduct any of the actions.

I relayed the knowledge gained from the processes and the views from those involved as accurately as possible. It was important that the words and the phrasing was clear and not presented in a way to mislead (Sharples, 1999). The research addressed what Sowell (1987) refers to as 'constrained and unconstrained visions'. Those who are referred to as people with constrained visions accept a situation as it is, and so learn to adapt. People with unconstrained visions consider possibilities and change and are willing to take action to realise them. The study aims to discover the current effects on pedagogic practice and ask the participants to offer possibilities and potential solutions to bring about positive change.

3.11 Reflexivity

As a participating researcher in my own study it was important that I remained as objective as possible. However, I was aware that it was difficult to be completely impartial, so I needed to consider my relationship with the research. Reflexivity is a concept based on the realisation that the researcher cannot take the position of a neutral observer (Gray, 2018). Essentially, I, as the participating researcher was part of the construction of knowledge, and the observations that were conducted were selective by their very nature and any subsequent interpretation was not impartial. It was important that my reflections on my observations and the knowledge accumulated from the participants' actions did not influence my interpretation of the data. Therefore, collaboration with the participating teachers was a way in which any partiality that I may have imparted was questioned and countered (this personal reflexivity will be explained further in this chapter).

Explaining my theoretical position for the study was especially important as I was conducting qualitative research. In addition, I needed to ensure that any changes that occurred during the research, be it in the design, circumstances (such as a change of room or teacher) or participants was clearly explained to give context (Bigby, 2015). I needed to be as transparent as possible in relation to my theoretical approach and my chosen process of data analysis (Gray, 2018). This was largely

due to the many potential interpretations that could be derived from the knowledge/data gained from the participants (Flick, 2009).

To go some way in addressing this issue, I made the conscious decision before starting the research to be fully involved in the data gathering tasks, such as interviews and issuing questionnaires, and deciding upon actions to be carried out during the action research. However, in terms of the actions conducted in the HE classroom as part of this study, I ensured I did not have any involvement except to liaise with the teachers to ensure that the actions were being carried out as planned and to receive feedback from the participating teachers and students. Coffey (1999) argued that researchers need to be aware of how they implicate themselves in the process. The two most common forms of reflexivity are:

<u>Epistemological reflexivity</u> which involves the researcher reflecting on the assumptions that they made about their research and the nature of the knowledge. The researcher may consider their research question; had it impaired or restricted what was discovered; could the study have been done differently; was the correct epistemological approach used? (Gray, 2018).

<u>Personal reflexivity</u> also involved reflection by the researcher, relating to their personal beliefs, values and attitudes and may include self-introspection on how they could have influenced or impacted the study. It is vital that the researchers are honest with themselves (Gray, 2014). My relationship with the participants needed to be clarified and I had to ensure that the study was not compromised because of that relationship.

By using some of the participants (teachers) as researchers in the study, discussion and critical engagement between us all was instigated and encouraged. I believe that such a collaborative approach with people who may have different epistemological positions and beliefs and who are able to take a more objective approach to the focus of the study has helped demonstrate a degree of transparency and validity to the data collected (Gray, 2014).

3.12 Ethical issues

I recognised that ethical issues were not just concerned with individual participants in this study, but also their educational community, the organisation in which the study was conducted and possibly the intended and unintended consequences of the actions taken (Rowan, 2000). I ensured that all participating teachers involved in the study were fully informed of the research purpose and the nature of how it was to be conducted. I did this verbally and then formally in writing where I requested written consent for their participation in the study, and also stressed that they had the option of withdrawing at any point (Townsend, 2013).

AR and AI form an emergent and fluid process that evolves and may take many different directions. This could have become problematic as the study progressed, because by asking the participants to be part of the study, fully cognisant of the intention of the research, I was effectively seeking permission to embark on a journey for which the route or direction neither I nor the participants were fully aware of. As a consequence, the study may have taken paths that created changes which some participants may have been resistant to, and as a result, they may no longer have wished to be involved. In such cases they had the right to withdraw at any time and all records of their involvement would be immediately destroyed or deleted (Williamson and Prosser, 2002). However, none of the participants withdrew from this study.

I obtained written permission from the Principal of the organisation in which the study was conducted. However, I was aware that any research conducted in my own organisation had the potential to be considered by the management as subversive (Coghlan and Brannick, 2010). For this reason, it was important to be explicit when explaining to the Principal the nature and purpose of the study and the aspirations that I had for it. I also made clear that the organisation would be completely anonymised in the research report (Thomas, 2013). As I was conducting action research within an organisation where I was employed (insider researcher), there were not only ethical considerations associated with the study, but credibility issues as well (Smyth and Holian, 2008; Holian and Coghlan, 2013). The findings may have included commercially embarrassing information for the organisation or its stakeholders (Coghlan and Brannick, 2014). Although I believed that the nature of the study would not compromise my organisation, I needed to make sufficient

contingency plans to protect all involved. Therefore, when writing up my study, I ensured I went beyond the acceptable boundaries of anonymity and made certain that no details were presented that could in any way identify the parties involved (Coghlan and Brannick, 2014).

It was important that the purpose of this study and intent of the questions posed during the interviews and in the questionnaires were made explicit to the participants. It would be wrong for me as the researcher to mislead the participants into believing that the reason for the research was different from its actual purpose (Creswell, 2003). Clarity of the study was imperative for the participants to gain trust in what I was doing. The participating teachers' identities were protected by pseudonyms and respondent checks on the transcripts were conducted following all interviews to check for accuracy. Also, by expressing the information truthfully and sincerely, I hoped that the participants would become confident in my integrity and trust what I reported (Habermas, 1987).

The participants could not be harmed in any way during or because of the study, whether this was physically, mentally and/or emotionally (Townsend, 2013). The actions that were taken during the AR phase of the study had to be carried out based on data that had been analysed and carefully considered over an appropriate period of time, using reflective thinking (Kahneman, 2011). It was also important that the eventual decisions (actions) that were made did not in any way disadvantage any participant, and that the actions were undertaken in the knowledge that all had the potential to benefit from the learning and teaching experience.

Due to the political dimension of the study, there may have been consequences for the participants if their confidentiality and anonymity were not preserved. For this reason, the teachers and the student groups involved in the study were not revealed to anyone, nor information on the times and the lessons involved, during the period the study took place (Williamson and Prosser, 2002).

All data collected during the study was stored securely, where only I had access with a secure password (in terms of electronic data). I only used data for the purpose for which it was intended, and it was presented truthfully and in the context in which it was obtained (Lichtman, 2014). When the data was used, I ensured that it was done in agreement with the specific participants who were involved at that point of the

study and was represented in a way in which they intended. In line with confidentiality and data protection issues, the participants' identities and reference to their actual words or answers to questions were protected throughout the study. In addition, their identities were anonymised using pseudonyms or letters, for example, Student AB (O'Leary, 2014). Once the data was anonymised, used and validated, the original source was destroyed/deleted (Thomas, 2013). For all of the above points, I submitted an application for ethical clearance to the Ethics Committee at the University of Leicester before I began my research.

Finally, throughout the study I stood by the principle that I as the researcher, had an ethical responsibility to conduct the study to create positive change in HE that would primarily benefit the students, the teachers and ultimately, the wider institution.

3.13 Conclusion

The design of the study allowed for emergent developments that could go some way in trialling strategies to overcome the effects of marketisation on pedagogy in the HE classroom, particularly the methodological approaches of AI and AR. AI served as an ideal strategic approach for the study. The endeavour to discover what worked well in the HE classroom and allowed the participants to dream about their ideal learning experience, aligned with my metaphysical realistic and idealistic ontological position. The application of AR to operationalise the design process and achieve the study's destiny by practical means supported my epistemological stance of pragmatism.

I believed that the interviews that were conducted for the study with the teachers, and the questionnaires and interviews with the students, were effective in generating the data required to offer a clear understanding of the challenges faced by the HE teacher in FE. I also believed that the student learning experience would benefit. I was acutely aware that conducting interviews for the study was time consuming and difficult to achieve within the time-frames allowed, and logistically in terms of having participants available to engage with such meetings. I decided that if that was the case then I may have to consider conducting fewer interviews or finding different ways of obtaining the data. However, for the validity of the data collected during the interviewing stage of the research, it was important that a sufficient combination of interviews was conducted.

CHAPTER 4

<u>Results</u>

In this chapter, I show how the Appreciative Action Research Model (AARM) was used in this study to manage the process of data collection (Discovery and Dream phase) (see figure 3.2), and to describe and discuss the results captured (Design phase) whilst going through the AARM process to its completion (Destiny phase). To clarify the contents of the chapter, a roadmap of key events is shown in table 4.1.

table 4.1 - <u>Roadmap of key events reported on in the chapter</u>

Roadmap of key events
January to March 2015 (10 weeks)
Pilot Study – Resulting in the creation of a Two-Stage Emergent Learning and Teaching Model – used as the baseline for the main study.
September to December 2015 (10 weeks)
The application of the Two-Stage Emergent Learning and Teaching Model (baseline), which was used to inform the 'Discovery' and 'Dream' phase of the AARM.
January 2016
Begin the main study - Apply the 'Discovery' and 'Dream' phase of the AARM (based on the results gained from the use of the baseline) to assess the effectiveness of the pedagogic approach.
February to June 2016 (12 weeks)
AR - Cycle 1 (AI – Design)
September 2016 to February 2017 (16 weeks)
AR - Cycle 2 (AI – Design)
February to June 2017 (12 weeks)
AR - Cycle 3 (AI – Design)
August 2017
For the 'Destiny' phase of the AARM consider the positive outcomes that have emerged from the process.

The baseline was created from thoughts and views of a small group of students and teachers from the pilot study on what would work well in the HE classroom to generate an effective learning environment. As a result of the data collected, a Two-Stage Emergent Learning and Teaching model was developed (which was the baseline for the study) which was then trialled for 10 weeks with a larger group of participants and used to inform the 'discovery' and 'dream' phases of the AARM.

The chapter then proceeds to describe application of the AARM. It starts by discovering what worked well in the HE classroom when using the Two-Stage Emergent Learning and Teaching model created from the pilot study, how effective this was in giving the students a deeper understanding of topics and how it could be improved (based on the data from the baseline). Following collection and analysis of the data, AR was used as part of an elongated design phase to make emergent and iterative changes for positive improvement in the HE classroom for both students and teachers in response to the researcher's questions. The chapter concludes with an outline of the destiny phase in which I consider how successful the actions were in addressing the 'Dream' phase of the AARM cycle and the research questions.

4.1 Overview of the Pilot Study

The pilot study was conducted from January to March 2015 at the same educational institution as the main study. It offered an insight into the views of a small cohort of participants, in this case 2 teachers who focused on the effects of monitoring and accountability on pedagogic practice in the HE classroom in an FE setting, and 4 students in relation to their learning and teaching experiences (the students would not be involved in the main study). The pilot study also considered possible approaches that could be taken to make the learning experience more positive and effective. For the purpose of anonymity, the teachers were identified as Sarah and Alan, and the students as Student 1, Student 2, Student 3 and Student 4.

The pilot study generated some interesting data that helped provide a direction for the main study. Initially, I provide a summary based on the interviews undertaken with the participating teachers followed by an overview of the responses from the questionnaires and interviews conducted with the participating students.

Summary of teacher interviews

The interviews with the teachers were based around two areas of discussion. Firstly, how the effects of monitoring and accountability in the HE classroom can be positively addressed, and secondly, how pedagogic practice can be changed to encourage deeper subject knowledge. The themes raised from the teachers' responses for the pilot interviews are shown in table 4.2:

table 4.2 - <u>Themes emerging from the pilot interviews</u>

The themes raised
The need for more time to teach students
The need for students to practise new skills
The need for students to apply their knowledge

The first was the need for more time with the students to enable them to assimilate the information/knowledge which was covered in lessons. For this to happen effectively, the second theme needed to be considered; students had to practise new skills and develop their understanding of a topic further. The third theme was the opportunity to apply their knowledge and understanding in different contexts to develop their higher order thinking skills and demonstrate a deeper understanding of the subject/topic.

One of the main effects identified by the teachers during the interviews was a narrowing of the curriculum for the subjects they taught, with a contributory factor the time constraints being imposed on their programmes to make these more cost effective (profitable) and competitive in the market. As a result, the teachers found themselves forced to spend less time on each topic to ensure that all the required outcomes were addressed. As the teachers were accountable to ensure the students achieved at least a 'pass' on their programmes, they had to ensure that they had taught the students enough subject content to achieve the 'pass' within the allocated timeframe, a dilemma that is highlighted in much of the literature (Green, 2013; Biggs and Tang, 2007; Biesta, 2004).

The interviews highlighted that the teachers had used a range of teaching methods in the past that they believed served the students well. Such methods allowed the students to construct their knowledge and gain a deeper understanding of particular topics. Both teachers suggested that previously, the process of conducting initial exercises to develop the students' skills in which they could be supported proved effective. Following such support and the opportunity to practise their newly learnt skills, the students were able to perform the operations on their own almost *'as second nature'* as a part of their learning according to Sarah. They would then be tasked to apply their newly learned skills and knowledge to specific contexts which

demonstrated their level of knowledge and developed a deeper understanding of the material, thus employing their cognitive and constructivist elements.

Sarah continued by reflecting on her previous career teaching in a school before the introduction of the national curriculum. She said this period gave her the freedom to tailor the exercises and pace of the learning experience to suit the level of the students. However, Sarah said, 'when they brought in all the national curriculum and so on, it was all tick boxes and you did things that weren't necessarily right at the time and you were trying to teach them things that they couldn't do because you were trying to jump through hoops.' At this point, Sarah believed that pupils seemed to become less motivated because they were being asked to do things they had not learnt fully and were not ready for. Both Sarah and Alan felt that the FE sector was now in a similar position to that of schools, which also affected the HE provision.

With time constraints placed on the teachers and the need to ensure that enough topic material was taught to their students, two issues came to the surface. The first was a risk that too much underpinning knowledge/ information is given to the students to assimilate within a short space of time; as Alan said, 'the volume of information that we expect them [the students] to take in [absorb into memory] makes it difficult for the students to fully process it'. This potentially resulted in the students being unable to understand a particular aspect of a topic, as they were not able to digest and understand some fundamental knowledge introduced. This then compounded the second issue; the students were simply not ready to achieve to their full potential because they had not been able to develop a deeper understanding of a topic required for the units. According to Sarah, the lessons would benefit from 'the time for the students to reflect on what they have done; how has it affected the task and what could be done differently?'

Summary of the questionnaires with the students

During the pilot study, the students were asked 3 specific questions in the form of a questionnaire. The questions asked, and the themes raised from the student responses (see table 4.3) were as follows:

table 4.3 - *Explain the teaching approaches on your course that you believe work best to help you learn?*

The themes raised	Number of responses
Practical	4/4
Lecture	3/4
Conducting exercises (practise)	3/4

A practical approach to the lessons was highlighted by all of the students with Student 1 saying, 'the practical gives more hands-on experience and confidence', and Student 2 adding, 'more practicals would help to understand [the topics] more and also it would widen [my] knowledge'. However, the students still saw the benefit of the lecture. 'Teaching is always better the 'chalk and talk' way. This makes the student keep their focus on the work', was the response of Student 3, with Student 1 emphasising that 'both theoretical and practical have an importance in these kind of studies as they have to go side by side'. Finally, the opportunity to practise new skills and concepts was considered as important. 'Doing exercises during the lesson also helps a lot as I can ask more questions when I get stuck'.

table 4.4 - *What teaching approaches do you believe would help you learn better in the classroom? Explain why?*

The themes raised	Number of responses
More practical approaches	4/4
Peer/group work	3/4
Conducting more exercises (practise)	2/4

'Having more practical explanations and doing lots of exercises during lessons', was the view of Student 4 and shared by others in the group. The opportunity to engage with peers was also raised by most of the respondents with Student 3 saying, 'for me group study is a good way of learning and sharing knowledge. I would enjoy working on projects with others in the class because it would be a fun way of conveying knowledge'.

table 4.5 - *If you do not understand something in the classroom, do you seek help from the teacher or a peer or both? Explain why?*

The themes raised	Number of responses
Both Teacher and Peer	3/4
Teacher	1/4

Generally, the students were prepared to seek help from both the teacher and their peers. Student 2 said, 'I seek help from both the teacher and the class mates. Most of the time I seek help from my class mates although there wouldn't be a problem to seek help from the teacher'. Student 4 agrees but added, 'It actually depends on the teacher. Sometimes I don't feel confident asking the teacher the same question over and over again, which leads me to turn to a peer as I feel confident to ask a friend as much as I want. But then again it really depends on how confident I am with the teacher'.

The themes that arose from the student questionnaires revealed that they preferred a more practical approach to the curriculum as they believed it helped them to better assimilate their understanding of a topic. They also believed that the opportunity to work with peers on exercises and projects also had the potential to improve their learning experience. During a discussion, I asked the students to clarify what they meant by 'practical'. They all agreed that by 'practical' they often meant 'doing' a task rather than listening to a lecture. They clarified that the 'doing' can be in the form of exercises, practicals or projects.

<u>Evidence from the pilot</u>

Based on the knowledge gained from the teacher interviews and student questionnaires, I was able to create an initial learning and teaching model that formed the baseline for the main study. The model needed to include aspects of effective practice that were identified by the teachers to encourage a deeper understanding of topics. This included the opportunity to start with the context of the topic fundamentals, which were developed and, if necessary, repeated to help embed the process in the students' memory.

The students preferred a practical approach to learning (as opposed to listening or conducting research) as they believed it helped them learn and gain a better

understanding of topics. Kolb's ELC (1984) (see figure 2.3) uses a practical approach which was ideal but also had an additional benefit of having formative assessment built in to the model. Vygotsky's ZPD (1978) (see figure 2.2) could be considered as a support mechanism. With a structured approach to lessons and more formative forms of assessment and support, the inclusion of Shepard's ECP (2000) may be useful and encourage higher order thinking skills. The combination of the three models into a single one seemed a logical starting point. To ensure that there was enough time for the students to construct their knowledge, the model needed to be divided into two stages. From the knowledge and data obtained from the pilot study, the Two Stage Emergent Leaning and Teaching Model was developed (see figure 4.1).

figure 4.1 - The Two Stage Emergent Learning and Teaching Model

	Stage 1	Stage 2
Foundation Building (context)	The basic and important fundamentals of the subject/topic and the relevant concepts are taught to the students. Scaffolding used initially to help support the students to achieve specific knowledge and skills and develop their thinking and reasoning abilities (Vygotsky, 1978).	The subject/topic is developed further with more in-depth learning and knowledge requiring higher order thinking skills. The students should become more competent and begin to think and reason for themselves. Consequently, the scaffolding provided by the lecturer is proportionately reduced (Vygotsky, 1978).
Concrete Experience (feeling)	The students engage in hands-on tasks, where they actively experiment with a concept and feel the experience of actually doing it (Konak et al., 2014). This can be done individually or in small groups. This could involve making something, conducting a problem-solving task or studying artefacts.	Either individually or in small groups, the students engage in further hands-on tasks that enable them to actively experiment with concepts and gain more experience of the process. The tasks will be more challenging to elicit higher order thinking (Shepard, 2000: 8).
Reflection Observation (watching)	The students step away from the task and reflect and discuss their experience. Many questions will need to be asked which may involve peer discussion. Journals could be used or mind-maps created, and the students may try to assess the experience based on a comparable one they may have encountered (Rogers, 2002).	The students now step away from the task to reflect and discuss their experience. Any questions that will need to be asked will involve more intellectual peer discussion among the students, demonstrating higher order thinking skills (Shepard, 2000).
Abstract Conceptualisation (thinking)	The students will now begin to interpret what they have experienced and begin to understand what the relationships are. It gives the opportunity for the students to draw on previous experiences and the knowledge they have developed to make sense of experience. This may also involve research or building concept models (Kolb, 1984).	The students will interpret what they have experienced and begin to learn and understand what the relationships are. The application of 'metacognition' will be encouraged to help develop new learning from prior experiences and knowledge (Shepard, 2000).
Active Experimentation (doing)	The students now begin to interpret what they have experienced and begin to understand what the relationships are. They will then consider what they understand and transpose all of their thoughts and reflections to finalise a plan, putting into practice what they have learnt (Konak et al., 2014	After interpreting their experiences so far and by demonstrating a deeper understanding of their experiences, the students are now able to transpose all their thoughts and reflections into an action which can support the transfer of the knowledge to other applications (Konak et al., 2014: Shepard, 2000).

Introduction of the Two Stage Emergent Learning and Teaching Model

The Two Stage Learning and Teaching Model was based on research on learning and teaching models and their underpinning theories for the pilot study, along with feedback from teachers and students. The model was tailored for a specific purpose, in this context, teaching Engineering students on a HE programme in FE. It provided a structure for the participating teachers to plan their lessons, and allowed them to support the students in making sense of their own knowledge in an attempt to help them gain a deeper level of understanding of topics.

It must be noted that the model did not address how to teach the subjects effectively in the time available, which was raised in the pilot study during the teacher interviews, and the pace of the lessons and speed in which support is withdrawn as highlighted by the students. Although both these factors are crucial to create an effective ELT model, I made the decision to develop the model in stages, otherwise it may have become too complex in terms of its aim. Therefore, by adding structure to the learning and teaching process with important elements such as ELC, ZPD and ECP, the learning and teaching process may be more productive and thus, time may be less of an issue.

Stage 1 of the Learning and Teaching Model

Stage 1 started with the teaching of the subject fundamentals to give the students a platform for a solid foundation (to develop their knowledge of a topic) with the help of the teacher through scaffolding. Once completed, the student was then expected to engage in hands-on tasks, for example, exercises, experiments or research. After completing the tasks, a period of reflection was required for the students to think about what they had done and how, and whether it had been effective. From such reflections, the students were required to think about what they had experienced, what they had learnt and put together and apply a revised approach to the task. It is important to note that as the students progressed through the phases of stage 1, the teacher's role moved from being more central (foundation building) to one that was more supportive and facilitating as the learning process became more student centred.

Stage 2 of the Learning and Teaching Model

Stage 2 involved a similar process to stage 1, but with a deeper development of learning. Therefore, the knowledge and understanding that the students developed during stage 1 became the starting point for the foundation phase of stage 2. Although there was some level of scaffolding initially to support the transition to a deeper subject learning and knowledge, it was significantly reduced and removed very early in the process. The students were expected to be more competent to use higher order thinking skills to help develop deeper understanding of the subject. Reflections on the tasks were more critical, and the teacher was available for guidance and/or collaboration and to encourage the students to engage in metacognition. From that point, the students should be able to evaluate and synthesise their understanding and experiences to transfer this knowledge to different applications.

After discussing the model and my initial thoughts of how it could be applied with the teachers involved in the study, they all agreed to design a lesson based on the model to see how it could be applied in their own contexts. We met two weeks later to discuss the plans and I also conducted a 45-minute session on Design to demonstrate how such a session may be taught. Following my demonstration, the teachers planned their lessons using the two-stage model, and we had a very constructive discussion in which everyone shared ideas. The teachers felt they were ready to try out the new pedagogical approach. There were reservations regarding the capability of fitting the elements into a lesson, but everyone felt that if it was not possible to complete both stages in the timeframe (possibly due to some students taking more time to grasp concepts and understand specific topics), at least the students would not be disadvantaged. This was crucial for all the teachers; the students should not feel disadvantaged by missing out on subject content, therefore it was important that the planning addressed the outcomes for the topic or module as required.

The Two-Stage Emergent Learning and Teaching Model formed the basis for the teachers on the HNC programmes over a 10-week period between September and December 2015. 23 students and 5 teachers participated, applying the model to a range of level 4 subjects. The experiences of the students and teachers were

captured and used as the baseline for the main study, contributing to the 'Discovery' and 'Dream' phases of the AARM (see sections 4.2.1 and 4.2.2).

4.2 Applying the AARM to address the study

January 2016

The Appreciative Action Research Model (AARM) was applied to improve the learning and teaching experience of the HE students within the constraints of the FE environment. I wanted to discover from the students and teachers what they hoped for in pedagogy, and what they dreamed as being a 'perfect' approach. The research began by focusing on the 'Discovery' and the 'Dream' stages of the AARM where I engaged with all the participants following their experiences of the Two-stage Emergent Learning and Teaching Model, created as a result of the pilot study and trialled and used as the baseline for this study. The views of the students and teachers were captured from the questionnaires and interviews.

I started the study by engaging with the 23 participating students. Due to the number of students involved and the constraints on the time available to meet with them, I designed a questionnaire consisting of 3 questions (see 1). The first two questions were designed to address the 'Discovery' stage of the AARM (see 4.2.1), focusing on effective learning approaches and factors that can affect learning in the classroom. The third question addressed the 'Dream' stage of the AARM (see 4.2.2), by asking the students to reflect on positive learning experiences throughout their life and asking them to try to explain why they think that they achieved a deeper learning experience.

It is important to note that before issuing the questionnaire, to clear any confusions for the students, I conducted a group discussion with them to clarify the different teaching approaches teachers make use of. I started with the approaches familiar for a college environment; lectures, demonstrations, practicals and group work, and we discussed what was meant by these terms. Other learning and teaching approaches that came from the discussions were; peer interaction, practise and visual imagery, such as video, photographs, diagrams. Ensuring the students had a clearer definition of the different teaching approaches enabled them to use common terms for learning and teaching approaches that they had experienced. I also explained that if they had

an experience that did not fit into one of the categories discussed, they would need to explain the process as clearly as possible on the questionnaire.

The student names were represented by random initials to protect the participants' identities.

4.2.1 Appreciative Inquiry (AI) – Discovery (with students)

The 'Discovery' phase of AI allowed me to gain an appreciation of what was effective about the learning experience using the pilot learning model. The responses from the student questionnaires are as follows:

table 4.6 - *What teaching methods do you consider to be effective in helping you learn subjects and topics well?*

The themes raised	Number of responses
Demonstration	23/23
Peer interaction	23/23
Practical	22/23
Lecture	19/23
A long recap at the end of the session	1/23
Role play to see how things relate	1/23

<u>Lecture</u>

Lectures were considered to be an effective element of the student learning experience in the classroom according to 19 of the 23 participants. Lectures allowed the teacher to go into depth when introducing principles and explaining topics to help the students develop their understanding. In FE, this is often augmented with examples from the teacher's personal experiences. However, the participants believed that it should not simply be the teacher talking, but a live interactive platform where questions can be raised by members of the class for further clarification. Student AE said, 'Lectures seem to be a better way of presenting the subject where other aspects can't portray the information in a way that is understandable and that notes can be taken from'. Student AO agreed with the cautionary point that this can only be effective, 'when well-presented and [within an appropriate] time to digest content given', and Student AF added that also 'the lesson must run at a pace where note-taking is appropriate'.

It was also important to add that for lectures to be effective, they had to be presented succinctly and with clarity. Student AN said that the lecture can be 'helpful as long as they are not too long and are broken down into steps'. The views of the participants at this point were about a clear narrative in the lectures, broken down into segments allowing for discussion between the steps.

Many of the participants shared the view that lectures that included some form of interaction are useful, with the caveat that they must be used in combination with other learning and teaching approaches. Student AB agreed, 'In my opinion, I have found that the best teaching methods which I learn best from the most is a combination of lecturing, presentations and demonstrating. This is because I feel that the combination of all three help to fully explain the fundamentals behind the subject'. Therefore, using several approaches such as lectures, followed by visual examples enhanced by a number of worked examples to reinforce the processes and develop the students' skills may be appropriate for the Engineering programme.

Practical

Learning topics may be made easier when a practical approach is applied; this helps the students to understand the practical applications of what is being taught, and may make it easier to remember information when experienced rather than just being told or directed. 22 of the 23 students supported this approach with student AP saying that by using 'practical as a working example of a problem, it's seen and solved whilst working through the task, helping to cement knowledge more easily than through text books, lectures, etc'. 'What is effective for me', says student AH, 'is a brief demonstration of the topic by the teacher, some theory and examples on the [white] board, and then practical part which is done by the students themselves with help or guidance from the teacher'.

Including a practical element to the lessons can also facilitate a clearer comprehension of a topic, a view supported by Student AJ: 'Doing working examples of topics is effective. The more examples or practice questions I complete help me learn. Doing the practical side of learning gives me a greater depth of understanding'. When something is experienced rather than described, it seems the students are able to engage with the process better. However, there was a strong

preference for a demonstration of a process before conducting a practical task to allow the students to visualise it.

Demonstrations

All 23 of the participants cited demonstrations as a very effective approach to learning as they allowed the students to visualise what was required in a process and helped to clarify any confusion or misconceptions. This may be done by the teacher using physical examples and simulations, or through labs and site visits. Video was also a popular method for 21 of the 23 respondents. 'Demonstrations are an invaluable way of seeing how something should be done' said student AQ, 'you may have a preconceived idea of how you should, maybe look at a test, open or handle something that your teacher can show you is wrong or right'.

16 of the 23 participants suggested that demonstrations need to be followed by practical tasks to enable them to practise the processes and skills. Practise also enabled the students to reinforce such processes, or as student AB put it, 'Repetition of the key principles help to hammer it [the process] home. It will ensure that whatever is taught is committed to memory'.

I found the last comment interesting and later asked student AB to clarify if 'committed to memory' is the same as being understood? He pondered over the question before answering. 'What I mean is that I have learned how to do it [solve the task] almost automatically…to solve the problem, this is what I need to do', he said. 'But does that mean understanding what you are doing and why you are doing it?' I asked. 'Sometimes', he replied, 'but not necessarily every time'.

Peer Interaction

There was one more approach that all 23 of the participants felt strongly as being effective in the classroom - peer interaction, especially discussion when the students can share ideas and knowledge and debate areas of interest or contention. 'Discussion is the most effective method to help me learn topics', explained student AR, 'This is because we are able to ask questions which can help us as individuals to understand the topic. Discussions also raise areas of interest that link to the topics at hand. For example, another student may relate the topics to personal experiences that I would have never realised could be linked previously'. Student AT adds, 'I also

find this [peer interaction] very useful as there may be questions or answers that people in the group may bring up that I may not have thought about. Therefore, new ideas can be brought to light with having group discussions'.

table 4.7 - *What factors can make it difficult for you to gain a deep understanding of a subject or topic?*

The responses to this question supported those given for question 1. Three factors were highlighted by the students, but two areas in particular were once again strongly supported - Teaching and Time. The responses were as follows:

The themes raised	Number of responses
Teaching	22/23
Time	19/23
Resources	6/23

Teaching

22 of the 23 participants believed the teacher was a major factor in their learning experience, especially when trying to gain a deep subject understanding, Student AB gave an example, 'when a single style of teaching is employed, i.e. only lecturing or only presentations'. Student AR supported that statement, saying, 'If a topic is only explained to me in lectures I do not think I would gain a deep understanding of the topic'. Therefore, there appears to be a need to use a range of methods that suit the topic.

The way topics are explained to the students and the clarity of the message can have a detrimental effect on the learning experience. Student AN felt this to be a particular problem, 'When poorly communicated by the lecturer, ineffectively communicated with lessons not being built upon or jumping from one point to another'. This could be that the teacher is 'working only with handouts without practicing it enough to get the point of the subject across', as experienced by Student AG in the past. It seemed that not demonstrating the link between application and theory, and not relating the topics to real life scenarios can make the learning and understanding of a topic difficult.

<u>Time</u>

When trying to assimilate information, 17 of the 23 respondents believed time was an important factor. The knowledge that needed to be imparted from the teacher to the students within given time frames, during lessons or over the course of the programme, had a considerable effect on the quality of the students' learning. 'Some lessons can be quite full on,' says Student AC, continuing, '[there is] a lot to learn in a short period of time, as it is level 4 and 5. It can be difficult to absorb so much in certain lessons'. Student AF added, 'Here, a lesson is so fast and packed with information that taking notes is almost impossible, and actually being able to remember is next to impossible due to the amount of information'.

It appeared that a consequence of a constraint on time was an increase in the pace in which a lesson is delivered, a problem highlighted by Student AL, 'If lectures are rushed, especially at the very basics, it can cause problems down the line when it starts getting more complicated, so the pace of learning is critical, in line with the teaching quality. I find it hard to accept a concept without being able to understand the reason or cause'.

The students' experiences of the Two-Stage Emergent Learning and Teaching Model as part of the 'Discovery' stage and the potential implications will be discussed further in this Chapter. For the 'Dream' I wanted to find out the students' views on what would be different in a context in which the learning and teaching experience was ideal. The participants were asked to identify points during their education when they felt that the learning and teaching was particularly effective.

4.2.2 Appreciative Inquiry (AI) – Dream (with students)

The 'Dream' encouraged the participants to look to the future and imagine what the ideal learning experience would look like.

table 4.8 - *Think about a subject(s) or topic(s) from any point during your education where you believe that you gained a deep understanding of the subject matter. What subject(s) or topic(s) was it? Explain why you achieved that deeper learning and understanding.*

The responses were as follows:

The themes raised	Number of responses
The teacher	23/23
Time	23/23
Practise	15/23
Practical	14/23
Demonstration	12/23
Linking to practical applications (context)	10/23

The Teacher

All 23 participants placed the role of the teacher in a very prominent position to motivate people through effective teaching and facilitate deeper subject learning and understanding. Being able to communicate the topics well and to sufficient depth was important. Having well-structured lessons which included a practical aspect, or at least a link to a practical application where appropriate, was considered a factor in facilitating a deeper understanding of subjects or topics. Student AN said that 'The lecturers were able to communicate over the subject very well by using practical examples, explaining the use of science/use of what was being taught in the lecture'.

The depth of knowledge and experience that the teacher had seemed to relate to the level of knowledge and understanding that the students were able to achieve on being able to clarify points in a way that was easy to understand. Student AL, reflected on his experience, 'I had a training course at work for 2 days on some data analysis software which I gained a deeper understanding. The reason behind this is because the course teacher was one of the software programmers……. We could ask any question at any level and this guy knew everything about it and could explain it in an easy way what everyone could understand'. Interestingly, there were a number of points raised such as teacher knowledge and practical experience which seemed to be a basis for explanation and synthesis of ideas – very similar to pedagogic content knowledge.

Time

All of the participants considered time as a key factor in the development of a deeper understanding of a topic or subject. The pace of the lessons needed to allow time for the students to absorb the information to develop their knowledge. A common theme from the participants' responses was that when they believed they had gained a

deeper understanding of a topic in the classroom, it had been at least in part due to the time that they had had to digest the information and reflect upon it. Student AR said, 'the topic that I feel I have gained the deepest understanding of is maths during my HNC. Student AJ agreed, 'HNC maths. I think I have gained a deeper understanding due to the way the lesson is taught and the length of time we have for this lesson. Compared to other lessons we can have up to twice as long as this allows more time to air my views on the topic and the help required before completing the assignments'. Allowing sufficient time for numerous practise opportunities of what had been explained or demonstrated was also important.

Linking to practical applications (context)

Ensuring that topics were contextualised was also considered important to 10 of the 23 participants in facilitating a deeper knowledge and understanding. The context was introduced by giving examples of the application of the topic/subject matter, and being given the skills and processes to apply in real life situations. Linking the theory to real life experiences helped develop a depth of knowledge and understanding. The advantage of linking a topic was also highlighted by Student AC, 'I learnt a lot about Six Sigma and lean manufacturing which helps me do my job as I know things that will help me progress into an engineer. The teacher was previously in this field so we could relate to him, and he knew where we were coming from when asking certain questions'.

Practise

Being given the opportunity to practise processes and applications to help construct their knowledge was important to 15 of the 23 participants. Student AB said that 'after learning what I need to do, I like to practise, to help it become second nature. Repetitiveness has ensured that it is committed to long term memory'. Student AJ used the same method for all aspects of learning, adding that he did 'a lot of revision and practice questions to help me develop a deep understanding of the subject'.

Practical

Lessons of a practical nature that gave the opportunity for the students to engage in a more hands-on and kinaesthetic way were highlighted as effective for helping 14 of the 23 participants to gain a deeper learning and understanding of a topic in the past. Student AM admitted 'I found with subjects that were more practically based I was

able to gain a deeper understanding in'. Student AU stressed the potential of practical learning; 'I feel like the topic I have learnt the most about during my education was in my Engineering Diploma during my GCSEs, when we were using Milling machines and Lathes. This is because we were actually doing a job instead of just learning about it in a classroom'.

<u>Demonstration</u>

Being able to see how something is done proved to be particularly important to 12 of the 23 respondents. This was perhaps through the use of equipment, solving a calculation, or showing a process. Student AT recalled a time when he was having issues solving a problem during a science lesson. He said that the teacher spent time explaining the principles before demonstrating the process again on the whiteboard, 'he did several examples on the topic with different figures. I got a very good understanding of it that when given the question, I was able to start working out the answer immediately without too much hesitation'.

4.2.3 Group discussion with teachers

A group discussion was conducted with the 5 participating teachers to gather their views on teaching HE in FE. They were asked to focus on questions based on two topics (see Appendix 5). The first topic was designed to address the Discovery phase by focusing on how the effects of monitoring and accountability can be positively addressed in the classroom. The second affirmative topic was designed to address the Dream phase and focused on how pedagogic practice could be changed to encourage higher order thinking skills and deeper knowledge.

The participating teachers' identities are protected by pseudonyms. No de-briefs were conducted with the teachers following the interviews. However, respondent checks on the transcripts were conducted with the interviewees to check for accuracy.

4.2.4 Appreciative Inquiry (AI) – Discovery (with teachers)

The teachers were asked to discuss their views based on affirmative Topic 1: *How the effects of monitoring and accountability can be positively addressed in the classroom.* I summarise the teachers' responses below:

The pressure on the teachers to prepare students for examinations and assessments in FE to ensure high student achievement rates appears to have a negative effect on both the teaching and the learning opportunities. Alan suggested that if the subjects had less 'specific learning outcomes, you can just tailor [the topic] to what the students want'. He said that some of his bespoke courses did not have a qualification attached so this gave him the flexibility to design a course more suited to what the students wanted or that met their interests. Alan added that it also removed a mindset from some of the students: 'if I don't need to know this for a test I'm going to shut off and not listen'. Sean added, 'I think the students have become wise to the fact that they ain't got the time to waste on trimmings, or what we'd consider to be, you know, embellishment of a topic. They've got to pass, so want to do it as painless as possible'.

The issue of time constraints was raised and how it affected the teachers' roles. Andrew said, 'I just think that the lessons are too tight [timewise]. I'm having to cram so much shit into the syllabus, I no longer have time to do stuff I like doing and what the students get a lot from. Like practical stuff and group tasks where I set a problem and get them to work with each other and figure it out'. Sean said that he used group work regularly, 'I do a fair amount of group work for my subjects because they lend themselves to it, but to be honest, I'd like to have more time with them [the students] to help them develop their thinking, but I just find myself pushing them for quick solutions, which is not ideal, but time is just too precious'. Alan agreed, 'even with the labs that I do in science, I'm not really giving the students the chance to discuss [the tasks] that much with each other'. It appeared that allocating extra time on subjects had the potential to create a learning environment that would allow for a slower pace and time for the students to develop their understanding.

Another contentious issue raised by the teachers during the discussion, which was a direct consequence of the monitoring and accountability agenda, was that of classroom observations. All agreed that the number and ways classroom observations are conducted in FE needed to be reviewed. Sarah suggested that observations should be conducted in a manner similar to that of schools because 'you never have somebody just coming in once a year saying, oh, you can do or you can't do, which is what happens here, isn't it? In a school, people tend to come and see you in lessons, walk through it', says Sarah. 'I don't think it's the right people

who are coming to sit in the classes', said Andrew, 'the benefit would be me sitting in the back of Paul's class or sitting in the back of Sarah's class to see you deliver an area of maths that I'm struggling with'. Alan, added, 'I wouldn't mind if it was for the benefit of the students. If anyone can offer me advice to improve as a teacher that would be great. But as we all know, everything is based on the criteria of Ofsted and only for the benefit of the Ofsted inspection.' Such methods, along with appraisal systems, are now commonly used to audit teachers' performance for quality assurance purposes throughout the education system (Green, 2013; Ball, 2003), however, in the FE sector, teachers find it unfair considering the constraints imposed on them with time for planning, teaching and assessment.

Paul made it clear that any observations conducted should not be graded either, because 'when you get a graded that's a one that's a two that's a three, it's a rubbish way of grading and the criteria that they measure you against is different every time they come in'. This view demonstrates the effects of the continual flow of initiatives that result from performance tables and targets (Williams, 2010). Andrew complained, 'they don't even give us direct feedback. They don't give you a breakdown of what they saw in class, they just use it as a whip', highlighting the point that classroom observations should be developmental with constructive feedback. Sarah agreed that observations need to be less judgemental because 'it's still very much, this is when you have got to be perfect, and if you're not, there are all sorts of repercussions, someone coming to re-observe you and so on'. Alan had recently been though a developmental observation (which is ungraded, 1 hour long and conducted every two years) with a learning coach in which he received 'a lot of feedback' which was 'good feedback'. Regular, informal walk through observations may enable lecturers to spend less time preparing to address set criteria for a chosen lesson, and more on teaching the students. This may also lead to constructive feedback rather than criteria led and judgemental feedback, with both lecturer and observer learning from the experience.

4.2.5 Appreciative Inquiry (AI) – Dream (with teachers)

The teachers were asked to discuss their views based on affirmative Topic 1: *How pedagogic practice can be changed to encourage higher order thinking skills and deeper subject knowledge.* Below is a summary of the teachers' responses:

On discussing methods in the classroom that encourage higher order thinking skills, and particularly deeper subject knowledge, the lecturers were able to draw on a range of experiences. Sarah reflected on her time when she worked in schools where she would give the students investigations to conduct for maths. The students were 'given open-ended questions and [the teacher would] suggest concrete things that they could do initially. But then the idea was that they generate, it was generally in Algebra, some sort of algebraic way of solving it and improving it and then thinking of an extension that they can do from that so that they can learn something more from it'. This method allowed the students to bring in other techniques and knowledge learned in other subjects, helping to create links across subjects. However, this approach was less effective when linked to tests or specific criteria as it stifled creativity, as Sarah experienced. 'The government decided that there should be something that they [the students] should be tested on, and then obviously you had to say you've got to do this, you've got to do that …otherwise you won't get the right marks'.

Alan reflected on some of the demonstrations that were conducted at university that were not just informative, but also engaging, an aspect which helped the experience to stay in his memory. 'I can still remember some of the demos that they did... because they were that entertaining and showed the concept that well'. Although Alan believed it would be useful to do such demonstrations to encourage deeper understanding, he complained of the time needed to plan: 'I've tried a few recently but I just begrudge spending my evening doing all that when it really should be done at work…I don't think I've got enough time to plan it here'. Having technical support to help with the planning would be useful to relieve the time burden. Andrew found that key to encouraging a mindset in which the students want to learn and that stimulates their interest was to 'spend time identifying what the learners already know, because I think in a lot of cases we start them off with stuff that they are not already familiar with', which had the effect of knocking their confidence. By starting the topic at a point or level where 'they are ready to be more engaged', this may prove to be more productive for both students and lecturers. Andrew also believed that it was also important to link the subjects, 'linking the maths to the electrical principles to the practise and so on… gives them [the students] an idea of why they're doing this and encourage them to make the links'. Paul supported the

importance of linking subjects. At the time, he taught seven units with one particular cohort of students which he thought was beneficial to their learning and understanding: 'Because it's a two-year course I can mix and match, so with some of the units I can teach three or four units in one lesson so it sort of makes those links'. Sean added, 'if you are going to get deeper understanding, then really there needs to be some contextualisation. We need to be sure that the units link together'. Andrew also encouraged his students who have understood a new principle to share the process with their peers. 'In order to understand things at a higher level, if you can explain it to someone else you are up there with synthesis and analysis and evaluation'.

Sean suggested that an important factor in encouraging higher order thinking skills and deeper subject knowledge was for the students to have 'enough time to synthesise information. I would argue that sometimes, they [the students] don't have enough time to absorb it [the information]'. Alan agreed that if the topic was covered too quickly, the students did not achieve a deeper understanding of the topic. Citing an example from his Mechanical Principles subject, 'they'd passed the test, but none of them understood what it was for because we had to go at such a pace through the integration [the topic]', he highlighted the problem of teaching sufficient content in the timeframe for the students to pass the test. Andrew supported Alan's view, 'I think we force them because, like you said earlier Sarah, we have to get them through a certain amount [of topic knowledge] in a certain amount of time.' He suggested that the benefits of 'natural links and 'penny dropping' moments' were lost due to the students being forced through the topic with little time to reflect and taking away the 'good feeling that they would get having worked it out themselves'. Thus, the need to allow the students to make connections on their own to develop their knowledge and understanding seems to be very important.

A factor that needed to be considered, especially when programmes are semester based is not just the subject order, to allow links to be made, but the way the subject is timetabled. There had to be flexibility for the timetabling of subjects. Some subjects work well in a semester, others work better 'long and thin' stretched over a longer period. A more creative approach has been trialled with one of Alan's subjects. He found that a two and a half hour Hydraulics and Pneumatics session

was not being as productive a learning experience for the students as he would have liked. Therefore, it was timetabled differently, he 'had them for an hour and a half in the morning and another hour in the afternoon…we did all the teaching bit and conceptualisation [in the first session], and then, almost like a tutorial and worksheet at the end'. This approach enabled the students to 'mull it over, even at the back of their mind while they're doing maths and then come back to it - that worked quite well'. Creating space in the learning for the students to reflect seemed to be effective. Sean agreed, 'we've done that with the maths replacing two three- hour lessons with three short sessions'.

To change pedagogic practice to encourage higher order thinking skills and deeper subject knowledge, a range of points have been raised. One of the key factors appears to be the need for the students to be given more time to absorb what they have learnt, and to reflect and construct knowledge and understanding. 'Time, not necessarily longer lessons,' said Andrew, to allow the students to assimilate the information. It may be necessary to use technology to help create a virtual learning space to achieve this. A blended learning approach, for example, could be applied. Sean said that blended learning is ideal but must have a pedagogical purpose that is a 'part of the learning and is more thought out' in relation to the topic to which it relates. It is fair to accept that it is unlikely that government policy will ever change in relation to the time allocation, 'no-one is ever going to say we'll give you longer [to teach a subject], but what we can do is extend the time by saying, you're going to have to do an hour [of blended learning] in your own time'. Although this could contribute to students being able to apply higher order thinking skills and deeper understanding of topics, two potential issues arise. Initially, 'we're going to have to generate the resources for that', says Alan, so development time would need to be sanctioned. Secondly, the time spent by lecturers managing the process will have to count as teaching hours. Sean made the point that there is a misconception that 'if it's done online you do less hours. You don't. You do exactly the same. Because if it's on there [the computer], you've still got to manage it…you are just not gaining anything.'

'Identifying where the learners are to start with' provides a useful platform to build on, and generates interest in a topic among the students, according to Andrew. He also

suggested that 'if we know we've got learners that are more than capable, than we should be building in extension tasks' from the beginning to stretch and challenge them. Incorporating a 'case study/role play type thing, you can have a mixed ability group and they can learn from each other' suggested Paul who found this method very useful in the classroom to reinforce knowledge and understanding of a topic.

The importance for the students to make connections between subjects helped to give a broader topic understanding that could contribute to deeper understanding. Paul gave a good example of this with his aeronautical course, 'we are doing mechanical science, so we're doing stress and strains and extensions of things. And when we go back to the design when they [the students] are designing their aeroplane, I say, right, how much is that bottom wing spar going to expand? We haven't done it [say the students]. Yes, we have. We did it in mechanical science - so you bring the whole lot together'.

The use of demonstrations that are of a high standard and engaging is effective in facilitating learning and understanding but are 'time intensive' in their initial development, said Alan. He added that he had been trying out something different in the classroom. Alan now had 'these conversations, just after I've taught it [a topic], see what it means in the real world…when they [the students] are actually doing the question sheet they can see how it relates to things, and that seems to be working better'.

Summary of the Discovery and Dream phase of the research

The responses from the students and teachers suggested that changes to pedagogic practice is required to encourage deeper subject knowledge. One of the key factors was the need for students to be given more time to absorb what they have learnt. This allowed space for them to reflect and construct their knowledge and understanding. As teacher Andrew said, 'time, not necessarily longer lessons' to allow the students to assimilate the information. However, within a marketised system such as FE, reducing the period of time required to complete various tasks to achieve specific outcomes increased an institution's competitiveness. For this reason, the students sometimes found the pace of the lessons to be too quick, making it difficult to assimilate information at a rate they would prefer.

Peer interaction was highlighted by all the students when asked what teaching methods they considered to be effective in helping them learn subjects and topics well. Group work was also a point of discussion during the interview with the teachers, who believed that it was a useful approach, but could not be implemented effectively due to time constraints. Therefore, it may be useful to find a way of incorporating a more social constructivist approach to the learning and teaching experience.

Teachers accepted that the students learnt enough to pass the assessments and tests but could have a much richer and deeper learning experience if more time was available. However, it is important to remember the context in which the FE sector is placed. It is almost completely reliant on funding which is generally linked to student achievement. Therefore, as long as students in FE achieve their qualifications, the organisation has fulfilled its obligations and will be remunerated accordingly. Why, therefore, would such institutions extend the time allowances on programmes, when there is no benefit from a purely business perspective? For this reason, it is important to find a solution to the time problem that works within the existing restricted timeframes.

4.3 AI Design

The 'Design' of AI was used to address aspects of the pedagogic approach that were highlighted following the 10-week trial of the Two-Stage Learning and Teaching model developed as a result of the pilot study. The model was initially developed to create a pedagogical approach in the HE classroom that allowed for a deeper learning experience. However, the 'Discovery' and 'Dream' stages of the AARM highlighted that the model is too time intensive for lecturers and students to complete all the stages. This resulted in a rushed delivery of the topics that did not allow the students to digest the information or reflect on the learning. Consequently, the 'Design' stage focuses on what is necessary to achieve the ideal learning and teaching environment, based on the data obtained from the student questionnaires and the group interviews with the teachers.

The design stage is an elongated phase that consists of 3 separate AR cycles based on Townsend's extended model of action research (2010) (see table 3.1) to change

and develop the pedagogic approaches to teaching for the courses involved in this study.

4.4 AR – Cycle 1

AR – Cycle 1 – stage 1 - Refining the focus

Cycle 1 was conducted from February 2016 to June 2016 (12 weeks)

The knowledge gained from the 'Discovery' and 'Dream' stages of the AARM was used to define the focus for change that needed to be addressed to create an effective learning and teaching environment. The four areas highlighted for change, along with actions to achieve the changes were:

1. The Two Stage Learning and Teaching Model required more time for completion of the topics.
   - The new Learning and Teaching model needed to be a simpler process to use the time allocated as effectively as possible.
   - The model needed a period of reflection built in to give the students the opportunity to digest and reflect on the information and experiences.
2. Lesson structure needed to reflect the data gained from the student responses.
   - The responses from the student questionnaires were very clear, and in many cases, unanimous in the elements that the students found to be effective in helping them learn subjects and topics and gain a deeper understanding. These elements needed to be included in the model: lectures, practical elements to the lessons and opportunities to practise processes, techniques and applications, demonstrations, peer interaction, and context and time to reflect on the information. At this stage of the development, the new learning and teaching model was an emergent process so elements of Kolb's ELC were still part of the model in some form.
   - The feedback from the respondents had also given some direction on the preferred 'running order' of a potential learning and teaching model that seemed very logical, allowing the topics to build on during the lessons. At this stage of the development, the outline of the lessons seemed to consist

of a lecture to start off the topic, followed by a demonstration, a practical element followed by practice of what the students had learnt and time to reflect.

3. There needed to be an opportunity for the students to interact more in the classroom.

   - The Two Stage Learning Model was restrictive in giving the students the opportunities to engage with each other in the classroom. Allowing the students to construct their knowledge in the classroom through peer interaction could help them to generate a deeper knowledge and understanding of the topics. As a result, this may also help to speed up their learning and understanding. Therefore, I decided that a more social constructivist element to the model would be beneficial, replacing Shepard's ECP which was not as effective in the Two-Stage Learning and Teaching Model.

4. Vygotsky's ZPD model needed to be more prominent.

   - Including a social constructivist approach ensures that Vygotsky's ZPD is more central in the learning and teaching process. It was important that the support offered by the more knowledgeable person is not removed or transferred until the time is right to do so. Some responses from the student questionnaires suggested that it had been removed too quickly in some circumstances during the Two-Stage Learning and Teaching Model.

AR – Cycle 1 – stage 2 – Conducting reconnaissance

The participating teachers and I discussed the four areas highlighted during stage 1. There was general agreement that these areas were important for change and that the actions from these areas would leave a positive impact on the teaching and learning experience if they were realised. We also felt that we could incorporate most of the areas into a single learning and teaching model. The general feeling was that the social constructivist approach to the learning process had the potential to help the students assimilate information more quickly and ease the time constraints on the learning experience to a degree. However, most of us felt that time constraints could still be an issue. Nonetheless, we all agreed that it would be worthwhile to develop a new learning and teaching model and trial it to see if there were are issues around time.

AR – Cycle 1 – stage 3 – Reflecting on progress

For stage 3 of the AR cycle I needed time to reflect on what I had learnt thus far and ensure that I had consolidated the data with the literature sufficiently. I particularly needed to reflect on the initial focus for the AR cycle and consider if the 3 questions that the students were asked for the 'Discovery' and 'Dream' phase achieved the objective of discovering their learning preferences, and highlighting the circumstances in which their learning is affected. After analysing the responses, I was satisfied that the questions used were relevant and generated useful information. Therefore, the data was useful to inform the development of a new learning and teaching model.

Following discussions of my analysis and reflections with the participating teachers, we agreed to use Kolb's ELC as a foundation for a new learning and teaching model. The ELC process will allow us as teachers to develop the students' knowledge through an experiential approach resulting in the interaction of theory, experience and reflection (Dunlap et al., 2008). I needed to include elements into the model based on the results of the 'Discovery' and 'dream' phases of the study. Vygotsky's ZPD was integrated, adding an element of support into the learning process. I believed that the ZPD may work well with the emergent process of the ELC, encouraging a social constructivist approach that may encourage discussion between students, peers and teachers.

What became apparent during the Discovery and Dream phases of the AARM, was that the Two Stage Learning and Teaching Model was not addressing the needs of the students. The model did not always enable the students to gain the learning and understanding of topics and the students commented that there was too much information to process within a short period of time. The result of this was at best the lack of depth in the learning process, but at worse, the lack of understanding of the basic topic principles which meant that a 'good' understanding of the topics was very unlikely. Therefore, it seemed that the actions that were planned addressed all the areas identified and had the potential to generate an effective model.

AR – Cycle 1 – stage 4 – Planning for action

The new Emergent Learning and Teaching (ELT) model (see figure 4.2), was constructed based on the data considered over the previous 4 stages of the AR

cycle. It is presented as a linear model, and is designed to go through each stage sequentially from the foundation building (fundamentals) through to the concept deliberation (reflection). Nonetheless, it is cyclical as the process should be followed for each topic that is taught.

figure 4.2 - <u>The new Emergent Learning and Teaching (ELT) model</u>

Emergent Learning and Teaching (ELT) Model	
Foundation Building (fundamentals)	**Interactive Lecture** The teacher introduces the fundamentals of the topic. These are the primary principles or core elements on which the topic is based that the students will need to understand initially. This approach should prepare the students to develop a better comprehension of the topic's content whichbecomes deeper and more challenging.
Visual Representation (demonstration)	**Demonstration / video etc** This could be a demonstration such as a stage-by-stage example of a mathematical calculation or a process conducted by the teacher, or a video or simulation. The demonstration allows the students to see (visualisation) not just the stages or process, but any associated difficulties encountered, and clarify misunderstandings and misconceptions.
Experiential Learning (engagement)	**Practical Application** The students are given the opportunity to replicate the concept or process that was demonstrated by engaging in hands-on practical tasks to feel the experience for themselves (Konak et al., 2014). This can be done individually or as groups. During this stage the teacher observes the students' actions and offers guidance, acting more as a navigator rather than a facilitator. The students are encouraged to express their thoughts and views of the process through discussion with their peers and the teacher to develop understanding and to highlight any misunderstandings.
Knowledge Construction (interpretation)	**Further Tasks** The teacher takes a more central role and will add more content/depth to the topic and encourage the students to engage more collaboratively with the content and the tasks. Once again, this can be done individually or in groups. Further tasks are given to the students as active reinforcement for their learning and to further develop their understanding. Such tasks will increase in difficulty to challenge the students to draw on previous experiences and construct their own knowledge to make sense of the experience (Kolb, 1984).
Concept Deliberation (reflection)	**Reflect on experience** Finally, the students need the opportunity to have time to reflect on their experiences during the lesson. This needs to be instigated by the teacher and may involve tasks or a discussion which may be done with the teacher and/or the students / peers to share thoughts and discuss how they found the experience, what they believe they have learnt, what they found difficult and clarify any areas of uncertainty. It is also a good opportunity for the students to discuss the skills that they have used for the tasks that are transferrable (employability).

The New Emergent Learning and Teaching (ELT) model was designed to be used as a template for the teaching of each topic. Although the model may appear formulaic, there are many approaches that could be taken by the teacher to achieve each stage, reducing the potential criticism of it being too rigid and predictable.

The teacher starts by foundation building; giving context to the topics using an interactive lecture at its core. The topic fundamentals and key concepts are explained at this stage as a foundation for the topic to be built upon. The learning and teaching process can move on to some form of visual representation. This will

help the students 'see' the process in action and offers them an opportunity to clarify important points and potential misunderstandings and misconceptions.

It is then important to engage in an actual practical experience of the process to give a tactile, kinaesthetic 'feel'. By engaging in experiential learning, difficulties that may be encountered during the process should be highlighted and discussed between peers and with the teacher. The role of the teacher then becomes one of a navigator rather than a facilitator.

With the topic fundamentals in place, a visual representation of the process or concept and actual experiential practise takes place. At this stage, the teacher takes a more central role and adds more content at a deeper level as the pace of the lesson increases. The students add this new knowledge to their existing knowledge and begin to develop their understanding further. By applying their new interpretation to different contexts, the students will develop their knowledge and understanding further. There needs to be engagement among the peers through discussion and debate. More challenging tasks may be added by the teacher to allow for learning and understanding of the process to develop, commit to memory and identify relationships and connections in the topic matter.

Finally, time must be allocated for the students to reflect on the experience and discuss these with their peers. This gives the students an opportunity to broaden their knowledge by comparing their experiences with their peers. However, the time allocated for the lessons and the number of sessions for each subject remained the same and were perhaps a constraint on the teaching of each topic.

AR – Cycle 1 – stage 5 – Implementing and observing action

The new Emergent Learning and Teaching (ELT) model was implemented with 23 students for a period of 10 weeks across in 4 different subjects. In order to avoid any conflict with my positionality and reflexive stance, I made it clear in the research design that I would not have any involvement in terms of the application of the actions in the classroom, therefore, the model was not used for my subjects.

In preparation for the trial, I discussed the new ELT model with the participating teachers. We had 3 meetings; the first to explain the model and discuss how it should be used, the second to share ideas on how lesson plans may be developed

to ensure that they align with the requirements of the ELC, and the third for a final briefing to ensure all knew what was required of them, the importance of the order of the stages in the model and to clarify any misunderstandings. The second meeting was the most difficult of the 3 meetings for all to reach an agreement as views were shared on the level of detail required in the lesson plan, the need for the lesson planning stage to be time efficient and ensuring that enough of the standard elements were included in the plans to comply with the college quality policy.

The subjects that were chosen for the model's implementation were, Analytical Methods (maths), Mechanical Principles (applied science – physics), Electrical, Electronic and Digital Principles (applied science – physics) and Computer-Aided Design (CAD). As the new ELT model needed to be applied for each topic, it may be that the model needed to be implemented on more than one occasion for each subject within the 10-week implementation period.

Following the trial - I met with the 23 students for a 40-minute group discussion in which I asked them to consider two questions based on their experiences in the classroom during the 10 weeks. I encouraged them to share their views (which they allowed me to record), whilst I acted as a facilitator, mainly to encourage everyone to engage in the conversation. When specific points were raised and discussed, I asked the group to give a show of hands if they agreed or disagreed to gauge an immediate quantifiable response.

The students' views of their experience of the ELT model

I asked the students to reflect on their previous 10 weeks of studying all subjects at the college, and consider the factors that they believed were effective in helping them learn topics.

The visual aspects of the lessons were discussed positively by 19 of the 23 students. By demonstrating processes and showing videos or simulations, the students said that they were able to visualise specific topic areas better. Student AT said, 'most of the lecturers [teachers] show you stuff [visual materials] at the start, it could be an animation or do something on the board that just helps you picture what they're on about'. Student AN agreed but added that the teachers 'seemed to be doing it more, making a real effort. It makes a hell of a difference to what I understand'. It was

important that there was context provided when using a video, demonstration, simulation or any other visual representation, and the ELT model allows for this through an interactive lecture. As Student 18 stressed, 'the video or whatever thing that is shown needs something before it to give the whole thing context. The teachers normally give us some background first [fundamentals of the topic] before visual stuff so we understand what we're looking at'. However, although Student AF appreciated the benefits of the visual examples, he felt that 'too much time was spent on them which makes getting through everything else difficult in the time left'. Therefore, a balance may need to be achieved.

All the students agreed that learning topics was often made easier when a practical approach was applied, and the students were able to practise new skills and concepts: 'Being able to apply new skills or calculations and keep practicing them with new tasks and different applications absolutely drilled it in your head', said Student AR. Student AB agreed, adding that 'if you practise anything enough it becomes second nature, and for me it certainly helps to cement knowledge more easily than through just text books and lectures'. An interesting point was made by Student AC, 'I think that having the time to practise different things without feeling like you are under pressure to rush makes it easier to learn as well, because you don't have that pressure on you that you had last year. Also, being about to discuss the tasks with each other makes it much better [a learning experience]'.

All of the students expressed their liking for peer interaction and found it to be really useful in helping to understand concepts and ideas in the classroom. Student AR made the point that it 'helps take the pressure off a bit, you know, share the load. If you work on your own and you're stuck [unable to solve a problem], you can't do a lot about it, but now in class we can talk to each other and work stuff out between us'. The students all nodded in agreement and Student AF added, 'as classmates we can interact with each other and help each other. And I don't mean we're giving answers away, but I might have figured part of the problem out and Student AI has worked out the other, so we can help each other'. Another interesting aspect of peer learning was raised by Student AJ, in which he said 'as a group of people we have different knowledge and experiences. Student AR might relate the topics to personal experiences that I would have never realised could be linked previously. And there

may be questions or answers that people in the group may bring up that the rest of us may not have thought about. Therefore, new ideas can be brought to light with having group discussions.

17 of the 23 believed that the structure of the lessons helped with their learning with Student AB commenting that 'the topics seemed to build up layer by layer'. There was general agreement among the group that there was a logical structure to the way that the topics developed in the classroom. Student AN said that 'there is a nice structure to the lessons with the lecturer [teacher] following this set order of talk – show – us have a go and then discuss it'. Thus, the lesson structure appeared to allow the topics to build up as the lessons progressed. 'I didn't realise there was a set format until recently', said Student AC, 'all I know is that the lessons seemed easier. Not easier that the work was easy because it was still hard at times, but easy in the sense that it seemed to creep up on you gradually, so you were able to get your head around it'. I wanted to clarify the last point and Student AR interjected, 'I think what Student AC is trying to say, and I'm sure everyone will agree with him, is that because of the way we are taught now, the subjects are taught from the bottom up, from like, the core basics a step at a time. So, when it comes to a task, rather than us feeling like we have no idea and it's a big weight on our shoulders, it's just easier to grasp because of what we have done before'. There was general agreement from the others in the group through a show of hands.

A final factor that was raised by 17 of the 23 students was in relation to reflection being actively encouraged to discuss their thoughts, views and difficulties whilst conducting the learning tasks. Student AL said 'it felt really strange initially being told to reflect on what you've done. I really found it a great way to get my thoughts in order over the stuff we'd done'. Student AF had the same sentiment saying, 'it's a bit uncomfortable at first talking through everything in case you're wrong. But I'm amazed what a difference it makes to me understanding of things'. However, 5 of the 17 responses mentioned that sometimes there was not enough time to reflect long enough to fully benefit from the process.

The second question that I asked the students was what factors they believed made it difficult to learn topics.

There was one main area of concern identified by the students that affected their ability to learn subjects and topics during the 10-week period. 21 of the 23 students believed that if the pace of the lessons was too fast, it caused problems with their learning. Student AG said, 'there were a few occasions, especially in the maths when it was just too fast for me to get my head around the concept, so I was just struggling all through the lesson'. 'I agree', said Student AL 'and being able to discuss the calcs (sic) with others in the class helped a bit but I just felt that Sarah and Jasmine [the teachers] were having to kind of squeeze a lot into the session'. From these responses, it was evident there was a problem in relation to the time allocated for the subjects with Student AR saying, 'if you are able to grasp the initial concept of what you're doing, and most of the time I do, so the speed that the lessons are taught isn't too bad. But the problem is when I haven't [grasped the concept], it is really difficult to get a handle on the topic and the whole thing feels like it's running away from you'.

Another point in relation to 'time' was raised by Student AN. 'The one thing that I noticed that gets cut in those lessons where the pace was quick was the opportunity to practise stuff [skills, concepts or processes]. We had it in the Principles [Mechanical Principles] lesson a couple of times when we were working out beam deflection and coefficients. The opportunities we had to practise them were cut to two or three when normally it's about seven or eight'. Therefore, it seemed that a critical part of the ELT process – the opportunity to practise skills and concepts is affected when there are time constraints on the lessons.

It is fair to say that that if a topic is not understood at the start, it becomes very difficult for the students to understand when the teacher starts to move the topic forward to develop it to the next stage. As a consequence, the problem is compounded; the students do not fully understand the topics and are unable to construct their knowledge to the level and depth of understanding expected.

The teachers' views of the application of the ELT model
During a group discussion, I asked the teachers to offer their views and experiences of using the model in the classroom. Sarah started the conversation, saying, 'I found it a bit uncomfortable initially. I think purely because it was something I hadn't done before. By the time I got to week four I was getting used to it. The only problem I find

is I was having to go quite quickly to make sure I got everything in or I was going too slow on other topics and not getting as far as I wanted'. Thus, it seemed that gauging the pace of the session was difficult when using this model, even for someone of Sarah's experience. 'I thought it was OK', said Alan, 'the structure was logical for [mechanical] principles. I played with the pace a bit, did some groups quicker if I thought the group was getting the hang of it. To be honest, I don't think it's too dissimilar to what I've done in the past, it's just that you're more aware that you have to do certain things at certain times, maybe I'd do more examples than normal, although you are tied a bit with time. And the lesson plan was easy to do using the [ELT model as the] template'.

Andrew agreed regarding the lesson plan, then offered his views on the application of the model, 'Some topics worked well and some, I found myself having to slow down part way through, back off and kind of explain stuff again. Some of the students were still struggling with the pace of delivery. What I did start doing was starting the topics off slow, you know, when I'm giving them the key info, just 'till I was sure they'd grasped it because I guessed if they grasped the knowledge, they'd be able to move on a bit quicker with stuff. That seemed to work well. For the reflection time, I found myself firing questions at them to help them think about what they'd done'. Sean thought the structure was good but added that he was 'not convinced we had generated anything timewise. I think the visual element and the demonstration added a lot to the students' understanding the subjects better, but I still felt that I was forcing them to move on before they were entirely ready on a couple of occasions'. Sean said that he liked the idea that Andrew had of starting the lesson slow.

Based on the responses from the discussions with the students and teachers, positives could be taken from the use of the ELT model regarding its structure. However, both students and teachers still expressed concerns over the pace of the lessons and the difficulty in understanding material. It seemed that Andrew's idea, which he trialled, of teaching the key elements of the topics at a slower pace had some potential and would need to be reflected upon by the participating teachers.

AR – Cycle 1 – stage 6 – Reflecting and evaluating change

The new ELT model generated positive responses from most of the participating students in terms of its content and structure. The ELT model allowed the topics to build layer by layer which was recognised by the students. Once the teacher had laid a topic's foundation (giving context to the topics to aid understanding) using an interactive lecture, methods were then incorporated to help the students visualise the topics to help gain a better understanding. Because this aspect of the learning and teaching process happens early after the introduction of the topic, an image is instilled in the students' mind that seems to help give a clearer appreciation of the subject matter than that of just receiving information/knowledge from only one teaching approach.

The students were then given the opportunity to practise what they had seen or had been shown. Asking them to try out a concept or process and replicate it numerous times seemed to engage the students further. Such a hands-on approach allowed the students to experience the concepts and processes for themselves, and the challenges they faced as a result. Throughout this stage, the students were encouraged to engage with each other to share thoughts, opinions and experiences to help develop their knowledge and understanding further.

The inclusion of reflection as part of the learning and teaching approach was also received positively, with a number of students expressing their surprise at how useful it was in helping them learn and understand topics. As a model for learning, the ELT model was an improvement on the Two-stage learning and teaching approach developed during the pilot study and used for the baseline. The move from a two-stage learning and teaching model to the single stage ELT seemed to make the process feel more 'natural', allowing the learning experience to build more 'fluidly' and develop. In contrast, the original two-stage model felt more like a set of stages that were conducted at two different levels.

Following analysis of the responses from the students following our group discussion during stage 5 of this cycle, it is clear that the ELT does have positive attributes and seems to have made the learning experience more effective in the classroom. The early stages of the model (Foundation Building and Visual Representation) offers a

clear introduction to the topics, allowing the students to develop their comprehension of the subject matter and clarify any misunderstandings and misconceptions.

The practical tasks and application the students went through during the 'Experiential Learning' and 'Knowledge Construction' stages allowed them to engage with the concepts and processes and experience these for themselves. By practicing the concepts and processes, the students were able to instil the experiences into memory and apply them to other tasks of a higher level of difficulty. During this stage of the learning process, the students were actively encouraged to engage with each other in dialogue to express their thoughts, opinions and experiences with both peers and the teacher. This offered a degree of peer assessment and support. It also gave the teacher an opportunity to identify if any support was required, and if so, to what degree.

The inclusion of the final stage (Concept Deliberation) was an important addition to the new ELT model. It gave students the opportunity to reflect on their learning experience and digest the information that they had learnt, making sense of it and constructing their knowledge and understanding of the topic further. However, time remained an area of concern. Teachers were still constrained by the allocated time available to teach each subject. Therefore, the topics that needed to be taught had to be planned as best as possible to fit into a set number of lessons timetabled throughout the academic year. As a result, topics were taught within a small period of time.

Comments from both students and staff regarding the pace at which subjects are taught still has an effect on how much information the students can assimilate and understand. This could be more of a problem with some subjects/topics than others. Nonetheless, if a student is unable to grasp the fundamentals of a topic at this stage, it has the potential to be problematic when trying to gain a deeper knowledge and understanding as the lessons progress. Therefore, it is clear that the basic structure of the ELT model has the potential to effect positive change in the classroom and facilitate an improved learning experience. However, for the ELT to be fully effective in the classroom and address the focus of the study, the issue of 'time' would need to be addressed. However, being able to increase the number of hours or lessons for each subject is not an option as it would reduce the profitability of the HNC

programme, which is an institutional condition placed on all courses. Therefore, a more creative solution may need to be considered.

4.5 AR – Cycle 2

AR – Cycle 2 – stage 1 - Refining the focus

Cycle 2 was conducted from September 2016 to February 2017 (16 weeks)

After implementing the new ELT model during cycle 1, observing and reflecting on its effectiveness in the classroom, we agreed that the model could be used in principle, but we would need to use cycle 2 of the AR to find ways of addressing the issue of 'time' which resulted in the fast pace that students had complained of.

The participating teachers and I believed that it would be useful to consider other approaches that could also help alleviate some of the time constraints. Blended learning was suggested by the teachers as it had the potential to create an extension to the learning process. However, we needed to determine the feasibility of the students investing the time needed to practically engage with additional 'virtual' study tasks when not at the college. To gather their views, I designed a questionnaire for the students.

The students who participated for the first part of this study (Discovery to cycle 1 of the Design stage), had completed their studies, therefore, a new cohort of 39 students agreed to participate for the new academic year. They were employed full-time and studied on a part-time basis (1 day per week) at the college. In most cases, the students were encouraged to undertake the qualification to increase their opportunities for progression within their companies and were funded by their employers. Other participants had to fund the programme themselves and were often required to make up the hours lost (due to the time spent at the college) at some other time during their week in their companies. This often resulted in longer days in the week and extra hours at the weekend. Therefore, for different reasons, the students were incentivised to achieve the qualification. They were also rarely allowed time during company hours to work on any aspect of their college studies.

The participants represented two different cohorts of HE students who were studying on the HNC (Engineering) programme. The first cohort were on year 1 of the programme, and the second cohort were completing year 2 and had experienced the

pedagogic approaches that were applied in the classroom during cycle 1 of the study, therefore, they were in a position to compare the two approaches.

AR – Cycle 2 – stage 2 – Conducting reconnaissance

The participating students were given a questionnaire (see Appendix 6) which asked 3 specific questions relating to time spent studying when not at the college. They were asked to complete the questions over a period of a week and to answer them as honestly and accurately as possible. All 39 students participated and responded.

In response to the first question:

When __not__ studying at the college (the days in between your college day): do you reflect on the work that you had done during your college day?

Of the 39 participants, 13 said that they reflected on the work from college on the days when not attending classes, with student CM commenting, 'Where possible, I try to go over what we did in each lesson. However, some weeks differ and I might not be able to go through all of what was done on the previous college day. I do think about the subjects whilst at work and at home which I find helps me to remember certain aspects'. During an informal discussion with student CM afterwards, I asked him to explain whether what he had learnt on the programme was transferrable into his working practice? He replied that very little of the topic material could be applied to his job at that stage of his career. However, if he achieved the qualification, he would have the opportunity for promotion in which many areas such as science, principles, maths and project management would be useful for his professional development. Thus, his motivations stemmed from his own ambitions.

The benefits of reflection were also endorsed by student BF who said that he 'felt that during the last three weeks when doing the project management, I tried to put some methods of the project management to my job project, because it seems practical and successful. I felt that what I learnt is putting a positive impact on the job'. Unlike CM's circumstances, BF's experiences showed the benefits of being in a job that closely related to elements of the programme, providing him with the opportunity to apply the knowledge directly into practise. A considerable number of the cohort also reflected on their college work but more casually/informally, with the responses generally following the themes of 'lack of time' or 'only if it is for an

assessed piece of work such as an assignment or a test or exam'. Generally, unless the college work contributed towards a final grade, it was considered less important. The following comments by student BG and student CH respectively are representative of the responses, 'I occasionally sort through notes and go over homework tasks. I usually don't have the time to go through all of it', or 'Sometimes, if it is related to assignment-based work, I'll do it'.

26 of the 39 participants confessed to not doing any reflection on their college work mid-week mainly due to work (employment) commitments. For example, student BM said, 'Most of the time, work is too busy to think about anything else'. Interestingly, the responses seemed to suggest that the students saw practise and learning divorced from each other. This was an area that I investigated further with the participants.

The second question that the participants were asked to answer was the following:

When not studying at the college (the days in between your college day): do you do the tasks/homework (not assignments) asked of you by the respective subject tutors?

Nearly half of all participants engaged with the homework set by the lecturers either regularly or on an occasional basis. Student BM said, 'I always do at least one subject's homework before the following week at college. Sometimes I don't have time to do all of it, but I've usually attempted homework from all subjects', and student CC stated the benefits of doing so when grappling with difficult topics: 'more so if I have struggled in the week's lesson. I try and spend four hours a week doing college work'. Of the 39 participants, 9 did the homework if there was a need. Student CB, for example said: 'If I am struggling with the subject then I will have a go at the homework given. If I understand the subject then I won't do the homework', or in the case of student BK: 'If the homework has been set and a hand-in date has been given'.

Interestingly, 9 of the 12 participants who did not do the homework are second year students on the final semester of their programme. The most common reasons given were the demands to complete the subject assignments for which they were graded, work demands and family commitments. The following comments were typical of

their responses: student BB 'The time I spend on college work outside of college is assignment based only', in other words only assignments that contribute to the unit achievement and final grade. Student CD responded, 'No I do not…. I mostly spend my free time looking after the house and seeing family'.

What was interesting in relation to the responses to this question and to the number of participants who reported that they did not engage with the assigned homework is how the majority of the respondents reacted to the following question.

When <u>not</u> studying at the college (the days in between your college day): when you have engaged in tasks/homework (not assignments) asked of you by the respective subject tutors, does it help with your understanding of the topic?

Of the 39 participants, 25 reacted positively in relation to set tasks or homework helping with their understanding of topics, with another 6 participants saying that it did not always improve their understanding of a topic but had improved their understanding on occasions. Student BB said, 'Yes, it helps a lot as the work taught at the college stays in your head during the week, and when you return back to college, you understand the basics and what the teacher is explaining'. Another example of the positive responses was given by student CD, 'I do the tasks that are set in the evenings on various days of the week. Yes, it does help with my understanding. If I leave it a week I forget what I was taught'. Student BG was a student who believed that it helped occasionally but that there could be barriers, 'I feel some classes move on too quickly and I can't grasp the initial techniques so that can make the homework difficult'. The apparent pace of the lessons was a factor for most respondents who partially agreed with the question, such as student BL, 'Sometimes yes, but with maths not so much as I feel it is very rushed'. The 8 participants who did not attempt the tasks at all cited time as a factor due to work and family commitments.

Considering that 8 people said they did not do the homework tasks, it was interesting to note that 2 of them recognised that there were benefits if they did. Again, the demands on the participants' time due to job and family commitments was cited as the main reason for non-engagement with any out of class activities that may have facilitated a better knowledge and understanding of the topics studied at the college.

I now consider the students' responses together and reflect on the progress of the cycles as a result.

<u>AR – Cycle 2 – stage 3 – Reflecting on progress</u>

It was clear from the data that there were benefits to be gained by engaging in reflection and completing tasks during the participants' time away from the college. Ensuring that they did not 'switch off' from their studies and revisited the topics and tasks did appear to be advantageous in helping the students to develop a clearer understanding of subject knowledge. Yet 8 of the responses were negative and often pointed towards lack of time due to work and family commitments, with any spare time being allocated to 'graded' assessments, generally in assignment form. Of the 8 respondents, 7 were from the year 2 cohort, which was interesting but may have been coincidental. From my experience of leading and teaching on the HNC Diploma programmes, the second year of study (the final year of the programme) was perhaps more demanding than the first. There were some challenging subjects that included many elements from subjects they had studied in their first year. However, what was of interest and worth exploring further was the general claim from the participants relating to the lack of time to engage with their studies away from the college.

<u>Reflection on the questionnaire responses</u>

By designing and including more homework, I was hoping for the teachers to engage the students in applying themselves to the topics throughout the week. Using a blended approach, we were able to reduce some of the content during the classes, thus effectively creating some space and slowing the pace of the lessons. But such measures only work if the students were prepared to participate as it was a two-way process. It was disappointing to see that only a third of the participants actually reflected on their studies when not at the college. Another surprise was that although the majority of the students agreed that engaging in additional tasks and homework did have a positive effect on their understanding, *they were not prepared to engage*. I had the opportunity to lead a group discussion with 17 of the participants.

I was interested to know if, during their previous education, possibly when at school, they did the homework given. With the exception of one person, all of the group said that they did. 'I always tried to complete any homework set as I needed to reinforce

what I had learnt in class, although I tended to do it as quick as I could after the lesson, so probably that night, while it was in my head', said student CC. And student CH also agreed, but with the caveat, 'If I think I'll get something worthwhile from something, then I don't mind doing it.' What did he mean by getting something worthwhile? I asked. 'A grade or qualification or something like that,' came the reply. 'Yeah', agreed student BD, 'something that will help us in some way to understand something. So, if it's like homework just for practice, then I'll probably only do it if I need the practice.' There were general nods of agreement among the participants. During the course of the 30-minute discussion, the importance and demands of assignment work was mentioned by most people in the room along with the issue of prioritising their time between work, family and college. As student CM explained, 'if we need to do some homework like assignments, I do it because the assignments go towards my grade. I'm far less motivated to do homework at college if I think it's just for the sake of it'. A common theme that was evident through the questionnaire responses was that of time, highlighted by student CJ who said, 'Previously at college I did not have a full-time job, therefore had more time to complete homework. It's a bit more awkward now with a job…. just time to do things'.

What was interesting was their responses when I asked if they reflected on elements of their studies away from the college. 13 of the 17 students indicated that they did, with student BL stating, 'I didn't think I did, but when I was thinking about the answers to your questionnaire the other week I realised that I do more than I think'. Student BR added, 'often when I'm lying in bed or resting I think about the topics. When I'm fully relaxed I'm able to go through what I've done and often figure stuff out'. 'Yes, you need that quiet time, I think to be able to think about stuff', added student CK, 'I think that's why it don't necessarily work if you put stuff on Moodle [the VLE] because it's online and your brain's being too active – well that's what I think anyway'. 'To be honest, I don't mind doing some of the tasks put on the Moodle [VLE] because it just gets the brain thinking. I usually print it off and look at it when I feel like it', said student BP.

For student CD, it was 'virtually impossible for me to switch off from stuff at work and having a small family. So, I don't really think about anything to do with college when I'm not here, unless I've got assignments to finish.' So, you didn't think about any of your college studies at all? I asked. 'Not consciously, as I can remember. Although

when I'm travelling here [to college] each week I do get in that mind-set and I guess reflect on the topics as I travel on the train. Also, to be honest, we normally have a short discussion at the end of each lesson where we are asked to talk about what we have done and think about it a bit, which I think works well for me'.

Following the short informal discussion with the students, I felt satisfied that there was a degree of reflection that the students engaged in. As raised by student CK, trying to initiate some form of reflection through tasks on the VLE was not as effective as I had anticipated, but I still believed that we were offering an option for those who chose to use it, such as student BP.

In response to the data, I decided to continue with the ELT model designed for cycle 1 without the addition of any out of class activity, with the exception of assessed assignments. Therefore, I needed to consider a creative way of using the time available.

AR – Cycle 2 – stage 4 – Planning for action

In preparation for the planning for action, I reviewed the data collected thus far from cycles 1 and 2. As a result of a lack of time in the classroom, the students were unable to grasp the subjects as comprehensively because they often could not apply the basic principles of a topic or subject. The reason appeared to be because the students did not fully understand them. Therefore, would it be better if more time was spent on this aspect of the lessons?

In preparation for the new trial, the teachers and myself met on two occasions to discuss the model and talk through the process. Andrew demonstrated how he changed his approach when using the ELT model in cycle 1, taking his time to explain the basic principles of his electronic topic before speeding up for the remainder of the model's stages. The rest of us tried to imagine ourselves as students to experience the effect of the change. Following reflection on the experience and further discussion, it was suggested that if we could get the students to understand the key principles and demonstrate this through application, it may be possible to conduct the latter half of the model at a faster pace to 'make up time', without disadvantaging the students.

We agreed as a team that the most suitable place for this to happen in the model would be after the students had demonstrated the ability to apply the new knowledge/skills and practise them. At that stage, the students should be more confident in their ability and understanding of a process or skill.

The plan, therefore, was to trial an approach of 'slowing down to speed up'. As a result, the topic basics were taught at a slow pace to allow more time for the students to develop their understanding of the topic. Once they had that clearer understanding, they should be able to develop their knowledge and understanding better when the pace of the lessons speeded up, and through social interaction with their peers. Such a slower approach towards information transfer from the teacher to the students was supported by Eriksen (2001) who talked about the speed of information in media:

> A general rule of the information revolution is that in a 'free and fair' competition between a slow and a fast version of 'the same thing', the fast version wins. The question is what gets lost along the way. The short answer to this is *context* and *understanding*.

Eriksen (2001: 70)

The structure of the ELT model remained the same as the one developed for cycle 1 and the structure of the lessons followed the same process used for cycle 1 of the AR, but with additional instructions included in relation to the pace of the lessons (see figure 4.3). The difference was the change in pace during the early stages, with the pace of the lesson speeding up from the interpretation stage (Knowledge Construction) when the teacher would take a more central role and add more content/depth to the topics and encourage the students to engage more collaboratively with the content and the tasks.

figure 4.3 – <u>The modified Emergent Learning and Teaching (ELT) model</u>

Emergent Learning and Teaching (ELT) Model	
Foundation Building (fundamentals)	**Interactive Lecture** The teacher introduces the fundamentals of the topic. These are the primary principles or core elements on which the topic is based that the students will need to understand initially. This approach should prepare the students to develop a better comprehension of the topic content as it becomes deeper and more challenging. **It is important that this stage allows for student interaction and time to digest the information. Therefore, <u>the pace of the lesson needs to be slow and purposeful.</u>**
Visual Representation (demonstration)	**Demonstration / video etc** This could be a demonstration such as a stage-by-stage example of a mathematical calculation or a process conducted by the teacher, a video or simulation. The demonstration allows the students to see (visualisation) not just the stages or process, but any associated difficulties encountered, and clarify and misunderstandings and misconceptions. **<u>Continue with a slow and purposeful pace of delivery.</u>**
Experiential Learning (engagement)	**Practical Application** The students are given the opportunity to replicate the concept or process that was demonstrated by engaging in hands-on practical tasks to feel the experience for themselves (Konak et al., 2014). This can be done individually or as groups. During this stage the teacher observes the students' actions and offers guidance, acting more as a navigator rather than a facilitator. The students are encouraged to express their thoughts and views of the process through discussion with their peers and the teacher to develop understanding and to highlight any misunderstandings.
Knowledge Construction (interpretation)	**Further Tasks** The teacher takes a more central role and will add more content/depth to the topic and encourage the students to engage more collaboratively with the content and the tasks. Once again, this can be done individually or as groups. Further tasks are given to the students as active reinforcement for their learning and to further develop their understanding. Such tasks will increase in difficulty to challenge the students to draw on previous experiences and construct their own knowledge to make sense of the experience (Kolb, 1984). **<u>The pace of the lesson may now speed up.</u>**
Concept Deliberation (reflection)	**Reflect on experience** Finally, the students need the opportunity to have time to reflect on their experiences during the lesson. This needs to be instigated by the teacher and may involve tasks or a discussion which may be done with the teacher and/or the students' peers to share thoughts and discuss how they found the experience, what they believe they have learned, what they found difficult and clarify any areas of uncertainty. It is also a good opportunity for the students to discuss the skills that they may have used for the tasks that are transferrable (employability).

The final stage focuses on ensuring that the students have the time to reflect on their experiences during the lesson (Concept Deliberation). This may be done with the teacher and/or their peers to share thoughts and discuss how they found the experience, what they believed they had learnt, what they found difficult and clarify any areas of uncertainty. This was also a good opportunity for the students to discuss the skills that they used for the tasks that were transferrable (employability). The teachers were able to plan their lessons based on the ELT model (see Appendix 7).

Following implementation of the model in the HE classroom, I asked for the students' views on their experiences. The data from their responses identified whether a

positive improvement had been made in the effectiveness of their learning and teaching experiences.

<u>AR – Cycle 2 – stage 5 – Implementing and observing action</u>

The modified Emergent Learning and Teaching (ELT) model was implemented with the 39 students for a period of 12 weeks. The subjects that were chosen for the model's implementation were: Analytical Methods (maths), Computer-Aided Design (CAD), Instrumentation and Control Principles and Programmable Logic Controllers (PLCs). Once again, none of my subjects were included in order to avoid any conflict with my positionality and reflexive stance.

By incorporating a 'slowing down to speed up' approach, we hoped that the students would gain a better understanding of topic fundamentals and would then be able to benefit from the stages of knowledge construction when delivered at a faster pace and the reflection time incorporated at the end of each topic. The participating teachers and I were interested to know if the students had a sense of the benefits of the changes in terms of the learning experience, so I decided upon 3 questions to ask the participants in the form of a questionnaire:

Whilst studying Analytical Methods (mathematics) at the college: Does the structure and pace of the lessons facilitate the understanding of the topic being studied?

The way the lessons were structured did appear to contribute towards a clearer understanding of the topics, according to 36 of the 39 participants. This suggested that the changes that were implemented in response to the data collected for cycle 1 of the AR had made a substantial difference. Student CJ explained, 'the teachers start off with a lecture to give basic understanding of the subject with a demonstration on how to do a calculation bit by bit, then we have a go. Then slowly the teachers introduce more difficult questions when the class is familiar with each topic. We're allowed to work with each other as well which is really useful and kind of makes the learning easier, or at least seems that way because we can kind of bounce ideas off our classmates'.

Student BCs response was also a common among other participants, 'we get an explanation, examples, then we practice for ourselves with help on offer from the other tutor. Towards the end we are able to pretty much help each other'. Student

BE offered a similar view of the lesson, saying that the teachers 'start with the lecture then [give] some examples. I think it should start with a lecture about the topic for a bit of background and help you get a better grounding. There are examples which we practise with similar questions which helps us get an idea of how to do the calculations. Being able to help each other in the class works well'.

Of the 36 positive responses, there were 6 respondents who agreed with the previous opinions, but still had reservations about the pace of the lessons. For example, student BR felt that 'the structure of the lesson is ok, but I feel the lesson is too fast paced at times – especially towards the last half hour'. So, there was clearly still a concern over the amount of material delivered in the lessons within the allocated time. The lesson pace was the reason given for the 3 negative responses to the question with student CT saying that, 'recently, I found the lessons to be too fast for myself to keep up. Depending on the tutor, the delivery of the topic does not always come across clearly and I regularly find myself struggling to keep with the pace and the structure of the lesson. I do not believe this is due to a lack of my ability, I believe the problem is due to the speed the lessons are delivered'. And student BL complained that 'maths ain't my best subject so it takes me some time to get to grips with some types of calculations. The teachers help me out a bit when I need it but I just feel like I'm not able to get my head around the stuff quick enough before the end of the lesson'.

The final two questions that the participants were asked were identical to the questions they were asked during the Discovery and Dream phase of the study. My intention was to see if there was a change in their opinion after experiencing the changes in lesson structure and delivery. To identify the best conditions in which the students can learn and the conditions that can affect their learning, the participants were asked:

When learning all subjects at the college: what teaching methods do you consider to be effective in helping you learn subjects and topics well?

Of the 39 participants, 35 emphasised the importance of demonstrations and the opportunity to engage in worked examples to enable them to practise. These approaches were identified as effective methods in helping the students learn

subjects and topics well. Student BI said, 'The best method that I would consider to be effective for myself would be the teacher doing an example of the question, then giving us exercises to practise ourselves. The teacher can go around the class seeing if help is needed'. Student BP added, 'I prefer it when the teacher explains and demonstrates then uses questions for us to do so we can try them ourselves. This way it is more independent learning and you can learn from your mistakes'. Student CS added a comment that was similar in tone to the three other respondents, 'ensuring that where possible, examples of applications in the working environment can be used as examples. This helps us to understand when certain topics can be used in context'.

The social constructivist approach seemed to be a popular approach for the students' learning and understanding of subjects, with 24 of the 39 mentioning the benefits. Student BM commented: 'it is good being able to discuss our work with each other and share ideas because other students look at things from another perspective and bring in their own work experiences'. 'Being able to share my thoughts and ideas with my peers and them sharing their ideas with me has really helped with my understanding [of the topic]', said student BL, adding that 'it takes some of the stress and pressure off of you as an individual to solve problems on your own'. This view of being able to discuss their approaches to their work and of solving problems collaboratively was a common theme. However, 3 of the students felt less confident at this stage of their studies to be able to engage with others, and all for the same reason which was explained by student CK, 'in some [subjects] where I'm finding it difficult, I feel a bit of a freeloader when someone in the class works with me or we do group work because they offer more to the task than I do because they understand it'.

In general, the responses to the questions were very positive in relation to the changes that were made to the lesson structures at the start of cycle 2 of the study.

The final question was included to highlight any issues that may exist that can affect the learning experience:

When learning all subjects at the college: what factors can make it difficult for you to gain a clear understanding of a subject or topic?

The pace at which the lessons were conducted, or the time given to topics appeared

to have a strong influence on how clearly the students were able to grasp an understanding of subjects or topics, according to 37 of the 39 participants. For example, student CI commented, 'an understanding of each subject is usually achieved. However, at times, there is not always enough time in the lesson to achieve this for each topic'. Student CO highlighted how time restrictions affected the pace of the lessons, 'The factors that make it difficult for me to get a clear understanding of subjects is lack of time and teachers having to rush through topics quickly'. As a result, student BE said, 'If the lesson's too fast, there's not enough explanation [by the teacher] or the ability to ask questions'. Other comments were linked to the pace and time issue, such as the lecturer taking up too much time explaining a topic, although for this study, it was important that the topic was fully explained, especially the fundamentals. Another issue raised was not allowing the time for the students to work on enough examples before increasing the difficulty level. Both issues were highlighted by Student CB, who found it difficult to gain a clear understanding of a topic or subject 'if a lecturer carrying out the subjects spends all lesson speaking and doesn't give the learner a chance to do examples and practise them or work sheets. Although on this HNC, all of the teachers in all subjects carry out the lessons well, having the right balance of talking and letting us work through tasks with each other'.

This was an area that the teaching staff had particularly focused on for this study to ensure that the fundamentals were understood and demonstrated through the application of a topic.

Group discussion with students

I was able to conduct a group discussion with 14 of the participating students during a tutorial. They all agreed to answer some questions that I had to clarify some areas in relation to the questionnaire.

I began by asking them how they found the structure of the lessons in enabling them to learn and gain a clearer understanding of topics and subjects. All 14 of the group agreed that the lessons gave them a better understanding of the subject matter, with student CK enthusiastically saying, 'I prefer it now because every lesson seems to build up on the subject that we're doing at the time. It kind of gets harder and deeper as the lesson moves forward, so you kind of add layers of difficulty as the lesson

moves forward. I like that because if you have a better understanding at the start of a subject, I think it makes it easier to learn more difficult things about it'. Student CL added 'what I do like now though, is at the end of the lessons, some lecturers [teachers] ask us to discuss what we think we understand of the topic we've been doing and whether we had any problems with specific areas……. I find it useful listening to peoples' thoughts on that and it often helps your own understanding. I have to say that some lessons seem to speed up a bit towards the end, it's not necessarily drastic but you sometimes notice it if you're struggling with something'. There was a general nodding of agreement among the cohort at this response.

The time allocated to tasks and in particular the pace of the lessons was a negative factor throughout the questionnaire. The pace of the lessons was overwhelmingly considered to be the most important factor to affect the students' learning. The additional tasks that the students were asked to do during their own time throughout the week was applied during this second AR cycle to address the time/pace issue in two ways. Firstly, the tasks served the purpose of encouraging the students to think about their studies during the days when they were not in college. This could then contribute to their knowledge and understanding of particular topics, and in turn help them cope with the pace of the lessons when studying at the college. Secondly, the additional homework tasks may help save time in the classroom, enabling the lecturer to concentrate more on subject specifics and depth of knowledge. This may effectively slow the pace of the sessions down. However, as stated earlier, the students' engagement with the additional tasks was not as high as expected, largely due to work commitments and course priorities - assignments for which they were graded. For this reason, I was interested to get a better understanding if a change in pace had been achieved by the structure of the lessons alone, or if it was still a serious issue that needed resolving.

I asked the group how they found the pace or speed of the lessons compared to year 1 of the course (before the changes for cycle 2 were implemented). 10 of the group believed the pace of the sessions was considerably better, although interestingly they said that the speed of the lessons began to increase as each topic progressed. Student CA commented that the pace of the subjects was 'much better than last year, nice and steady at the start getting the basics right. Last year, as we got nearer the end of the course it felt that the last subjects were being squeezed in to ensure

that the course was completed on time. Thanks to the slow start it weren't that bad this year'. This sentiment was shared by most, with the increase in pace seeming to be less of a problem due to the slower start. Student CI stated that it was 'still a fast-paced course with a lot to learn. It just starts slower than last year. We go through the basics of a topic and spend some time getting it right before everything speeds up and all hell breaks loose! Only joking! But it can get noticeably quicker towards the end of the lesson, but to be honest by that point you have a pretty good idea of what you're doing'. 'By that point in the lesson we're usually working with each other in pairs or small groups so we're helping each other out and supporting each other' added student CC. A small number of the group felt that the pace was about the same with student CJ saying, 'I don't feel like there has been too much alteration in regards to the pace of delivery within my subjects between years 1 and 2, just small aspects of the way they teach it and get us to think about it. I agree with you [student CC], working with each other on tasks really helps clarify stuff'.

Group discussion with teachers

The teachers were generally positive about the experience of using the modified ELT model in the classroom, with Sean saying, 'I thought it worked OK. Even though I spent time at the start [of the lesson] teaching much slower than I naturally do anyway, so it felt a bit awkward at the start, weirdly, that kind of thirty, forty-five minutes spent at the start seemed plenty of time to set them up [the students] for the rest of the session'. Sarah agreed, 'it felt a bit like I was achieving something with the whole group, like the days when I worked in the schools, like I've said before, in the days before the [introduction of the national] curriculum when we could ensure that pupils were ready to move on. Alright, you get the odd person who is still struggling but you can help them while the rest are working on further tasks'.

'I just started speeding up once they seemed to understand it [topic fundamentals]', said Alan, 'I'll tell you what really worked this time, having the guys working together and solving problems'. Andrew, agreed, 'once they grasp the concepts it's surprising how confident they get with it, especially working together [with other students], so they almost seem to speed up themselves'. 'I think it's about as far as we can go in the allocated time', said Sean. All of the teachers signalled agreement. 'To be honest', added Alan, 'I think for most subjects and probably all of the maths, Sarah,

you can get away with half an hour maybe three-quarters, to lay down the core elements, so that leaves an hour or three-quarters to develop their skills or whatever they've learnt, and when they're working together…?' 'Absolutely, it's doable', said Andrew, 'OK, it's not ideal. It would be wonderful if the sessions were two and a half hours long, but they're not and there's bugger all chance of that changing in the near future. So, with what we've got [time-wise] I don't think we can do much more'. The other teachers agreed.

Consequently, based on the responses from the questionnaire, the discussion with the students and their experience of learning using the modified ELT model, and the experiences of the teachers using the model, we concluded that although the time issue was not fully resolved, the approach to the lessons of 'slowing down to speed up' seemed to have been received well and gave the students an opportunity to achieve a better learning experience, especially when working collaboratively. By speeding up the lesson when the students were working with and supporting each other, the effect of the change in pace did not necessarily become detrimental to the learning process. However, I needed to reflect on the results and evaluate the effectiveness of the change from the new learning and teaching model.

AR – Cycle 2 – stage 6 – Reflecting and evaluating change

Following the responses from both the questionnaires and the informal group discussions with the students and teachers, the changes made to the structure of the lessons appeared to have had a positive impact on the participants' learning experience, contributing towards a clearer understanding of the subject topics. Although the pace of the lessons was still an issue with the students, it did not appear to be to the detriment of their learning. The method of slowing down the learning to ensure that the fundamental, core principles of the topics were covered in a slow, purposeful manner, and encouraging the students to interact with the teacher and digest the information (knowledge), seemed to have a positive effect. Such an approach helped prepare the students for when the pace of the lessons sped up. The variation in pace that was applied to each lesson seemed to be a solution (although, as noted by the teachers, not necessarily the ideal solution) to the time constraints within which the teachers had to teach the topics. The structure of the lessons also included time for reflection and discussion so there was breathing

space in which the students could digest the information and further develop their knowledge and understanding.

It could be argued that using such a learning and teaching model in the HE classroom could make the lessons seem too formulaic and rigid. Interestingly, although it was apparent from the responses from some of the participants that they recognised a pattern to the lessons, none of the responses referred to the lessons being predictable. I believe there was also enough flexibility in each stage of the ELT model for the lessons to be varied.

Although the responses from the students showed a degree of satisfaction for the new learning and teaching approach, I endeavoured to collect additional data to see how it correlated with the qualitative data presented so far. Once all assignments had been assessed and the grades verified, I had quantitative evidence from the assignment submissions to evidence whether there had been any effect on student achievement (see table 4.9 and table 4.10).

table 4.9 - Assignment data for the year 1 HNC cohort (21 students)

Year 1 HNC Diploma in Engineering (C0033)	2014/15	2015/16	2016/17
Number of assignments issued throughout the cohort	376	376	378
Student referrals (number of assignments)	34 (9%)	43 (11%)	7 (2%)
Pass grades achieved for completed units (does not include maths – to be completed in year 2)	4	25	15
Merit grades achieved for completed units (does not include maths – to be completed in year 2)	26	16	24
Distinction grades achieved for completed units (does not include maths – to be completed in year 2)	46	27	33

table 4.10 - <u>Assignment/grade data for the year 2 HNC cohort (18 students)</u>

Year 2 HNC Diploma in Engineering (C0034)	2014/15	2015/16	2016/17
Number of assignments issued throughout the cohort	236	234	231
Student referrals (number of assignments)	28 (12%)	19 (8%)	6 (3%)
Pass grades achieved for completed units	23	17	25
Merit grades achieved for completed units	30	22	31
Distinction grades achieved for completed units	19	37	28

The assignment data showed the grades achieved by the cohorts over three academic years, which included the current participants. For clarity, all the students on the programme only needed to achieve a 'Pass' grade for all units for the HNC qualification. Therefore, the grades achieved could be subject to a number of factors such as, the grade being capped at a 'pass' for a late submission, the ability of the student and of course their desire to work for the higher grade. For this reason, there did not seem to be much information that could be extracted from the grade results that could be considered as definitive quantitative evidence of the efficacy of the model. However, the number of referrals (highlighted in yellow) were shown to be considerably lower for both cohorts than the previous two years. This suggested that a clearer understanding of the topics may have been achieved by more students than in the previous two years, which was a positive change. As a result, fewer students needed to spend time working on referred work for resubmission. A by-product of the reduced number of referrals was that the teachers did not have to spend more time reassessing students' work.

Cycles 1 and 2 of the AAR had contributed to making a positive change to the learning and teaching experience in the HE classroom. Although both the students and teachers benefitted from the changes, there was still a need to reduce the workload of the teachers to create more time. Therefore, it was important that the teachers identified activities and duties that were demanding on their time and identify a focus for cycle 3.

4.6 AR – Cycle 3

<u>AR – Cycle 3 – stage 1 - Refining the focus</u>

Cycle 3 was conducted from February 2017 to June 2017 (12 weeks)

Cycle 3 built on the previous cycles by focusing on aspects of the pedagogic process that occured both inside and outside the HE classroom and impacted on teachers' time. Assessment of students' work and generating useful feedback was a large part of teachers' duties and an important part of the pedagogic process. The students' grades following assessment was a core element of student attainment and critical for monitoring and accountability measurement. I wanted to focus on the teachers' voices and their personal views relating to the constraints they were under when teaching HE students in an FE context (see 4.2.4 and 4.2.5) and consider ways to create a positive change.

To add a degree of context at this stage of the study, it was important to explain a change that had occurred from a monitoring and accountability perspective. During the first cycle of this study, the teaching staff had to conduct their duties while their students' progress and their courses were under constant scrutiny. Thus, they were held accountable for all issues around student numbers, retention and success, as well as student feedback (formal or informal) on the courses. In addition, every teacher had to undergo an annual lesson observation (graded every second year) and a number of 'themed' observations, in which specific aspects of teaching or broader aspects such as use of group profiles, were the focus. The observations were time consuming and stressful for many teachers as they had to tick certain boxes to be deemed 'good', which meant a considerable amount of extra preparation. If the correct boxes were not ticked, teaching staff had to undergo extra training and be re-observed. However, during cycle 2 there was a new initiative introduced by the organisation that created an additional pressure onto the shoulders of the teaching staff which further eroded the time for lesson preparation, a cross institutional initiative known as 'Team Time.'

The purpose of the team time sessions was to prepare teaching staff for an imminent Ofsted inspection. The sessions were not targeted at specific 'weaknesses' of departments or individuals, but on aspects of the learning and teaching environment

that the Ofsted inspection team would base its judgements and grades on. As a result, many teachers were forced to undergo training on aspects of learning, teaching and assessment that were decontextualized and thus, perhaps of little relevance.

Time had been allocated on Wednesday afternoons which were normally set aside for occasional programme team meetings or lesson preparation. Shortly after the implementation of team time, an additional session of training was added on a Tuesday afternoon. Clearly, the implementation of both sessions compounded a problem that the teachers participating in the study had already expressed their views on during the discovery stage of the study – the lack of time to design, prepare and conduct assessments to measure the level of knowledge and understanding of their students and offer meaningful feedback. Therefore, it was important for the study and the research questions that a discussion was facilitated to consider alternative methods of assessment and feedback that had the potential to create a positive change for students and teachers, without compromising the integrity of the assessment process.

I arranged to meet with the participating teachers to discuss these areas.

AR – Cycle 3 – stage 2 – Conducting reconnaissance

On 14th February 2017 I met with the participating teachers for a group discussion in preparation for cycle 3 of the AR cycle and asked the following question:

Team time is the cross-institutional initiative to ensure that all members of staff receive the same training so that the teaching in the classroom is more consistent, the paperwork used such as lesson plans and schemes of work are the same and that we all use the same systems. What are your thoughts on its purpose, its usefulness and its effect on you as a teacher?

Sarah started the discussion. 'I don't understand why in team time we are lumped in with motor vehicle because they are doing different boards [qualifications] and different modes of teaching and different levels'. Jasmine agreed that it would work better if done in specific teams, 'we should do it on our own as a HE team, because we are working at the same level. I know that we teach at levels three, four and five, but I would argue that Access [a level 3 course that is essentially a foundation year

for a degree] are taught similar to what we do at levels four and five'. All agreed. An interesting question was how others viewed the usefulness of team time around the college? Alan responded with feedback from union members after being asked a series of questions on this subject in an online survey (reading from an email on his mobile phone), 'they were asked if team time was an improvement on the annual observations that it partially replaces? '56% said, yes. Has the training been good quality and useful, 52% said, yes. Has the training so far been useful? 41% said, yes. These are the ones that were a bit more interesting. Is team time taking up too much of your admin time? 81%, yes. Have you found preparing for the walkthrough simple or onerous? Onerous, 60% [yes]. And then, have you found the process supportive? No, 63%. So most people want to do things to improve, but they are just not happy with the way it's being implemented. It's just the time. It's chipping away at time, isn't it?' Once again, the issue of time was raised in this study, although this was in relation to administration tasks such as course management, assessment, feedback, and lesson and assessment task planning.

All of the teachers involved in the discussion said that they found a lot of the sessions patronising as they covered what they considered were the 'basics' of teaching, such as questioning techniques or stretch and challenge approaches. Such training sessions led to negative feelings and stress among teachers across the institution. Time was being wasted doing training that was not relevant or useful to specific individuals. 'Is questioning a problem for all three hundred and fifty teachers here? Probably not', said Alan, 'Is it a problem for every department? Probably not. But there are other things that are problems for departments, and this one size fits all for every department at every single level doesn't make sense at all'.

The discussion then raised the notion that it would be more productive for those teams or team members that are 'good' at a particular learning and teaching approach to informally demonstrate and/or support other areas that are not so experienced or effective at using such approaches. Sean used the example of the continuing studies teachers and the quality of their lesson plans. 'They have a cohort of students, all with individual special needs and every person is catered for. So, their lesson plans are massively detailed, but they are specialists. Yet they are dragged in on this team time too. Yet they should be going in places like motor vehicle and showing them how to do these different things because they are

incredible with the students they work with'. Alan agreed that targeted at the appropriate departments, teachers and their students would 'get a lot from that', but argued, 'what we are doing is very different. We've got an enormous amount of information to get through in a really short space of time, so it is really intense'. This suggested that a different form of development was required targeted at encouraging the development of 'higher' academic skills. Sarah added, 'we are also trying to get the students to analyse information and data….. We are there to give the students the information, show them how to analyse it and let them go away and develop those skills'.

It was apparent from the conversation that the team were not against the notion of team time, but of the content, the topics chosen for the focus of the sessions, and more importantly, the time lost that could be used for the development of skills and approaches more suited to their HE students.

I then asked the participating teachers to consider and discuss the next question.

As teachers we have to assess the students to a certain standard and to specific criteria. We have to assess what they know, grade them on what they have done and of course offer worthwhile feedback. So, how do you suggest we can do that in more innovative ways?

Sarah suggested incorporating more exams rather than assignments for the maths unit. Alan added, 'I think the way you're going to mark maths anyway, there's never going to be the emphasis on feedback like there would be with some of your written ones. It's just a tick. Whether it's done by exam or whether it's done by coursework the answer is still 18'. Sarah continued to support her view, stating that the students 'would have to work for an exam whereas now it's very much, we do all the work for them in a way and the students know they can coast a bit. They don't have to go home and work through stuff because they have never really got to be tested on it'. Jasmine agreed and added that in many respects, using assignments for all assessments can give a false impression of students' knowledge and understanding because 'assignments are just assessing their [the students] ability to take good notes and understanding what the concepts are, they are literally not learning it'.

The work involved in generating written assignments for assessment purposes was often time-consuming, along with the marking of the completed work and writing feedback. This was another area that Sarah believed to be an advantage for creating exams, 'when you see samples from university exams, I don't think that they are necessarily as difficult or as complex as the stuff we put in assignments, but they are fairly short, sharp questions'. The rest of the teachers agreed.

Sarah and Jasmine generally ensured students did their maths assignments under controlled conditions in the classroom (open book and no talking to peers). The reason for this approach was to generate some validity and rigour to the assessments because maths is easy to copy, but hard to prove that it was copied. However, this year they had trialled 6 controlled assessments (assignments) and 2 exams for the higher grades of Merit and Distinction. The response from the students was interesting as most of the students sat the first exam for the higher grades, but far fewer sat the second exam. As Jasmine explained, 'it's quite good because those students who say that they really won't be able to get distinctions with an exam or don't want to put the time into revising for an exam for the higher grades, just won't sit it. And then they can't be saying, 'well, why haven't I got a distinction for this course?' because it was their choice'. This resulted in less marking, and in some cases, not having to mark work that would very likely not be at the level it needed to be for the higher levels.

Based on the discussion, the introduction of exams into the mix of assessments may be effective in reducing the workload (although care and time are needed to initially draft the questions that address the criteria). Marking of exam type questions as emphasised by Alan is relatively straightforward as the answers are very specific with little or no subjectivity. Feedback can be very minimal as the results of the exam and answers to ther questions give immediate summative feedback.

The next approach to assessment and feedback came from Sean who recalled observing presentations that a class were doing for Jasmine. 'The students did research towards an assignment and then did a presentation on what they had discovered. Yet it didn't in any way contribute towards the grading of the unit at all. There is an opportunity here to kill two birds with one stone. To utilise the classroom time and time to assess. Why not ask the students to do a presentation to address

the specific unit criteria as well?'..... 'all we do is save the presentation and do an observation sheet. Now, you fill out the observation sheet at the time, so you are saving time assessing their work and generating feedback later. I know it can be awkward because everything that is required on the criteria has to be on that presentation'.

Sarah recalled an approach that a previous colleague used to adopt with students who were conducting a presentation on their research study. The students 'would do their presentation and she [colleague] would sit there [in the room watching the presentation] and type the feedback as they did it'. Sean added, 'I used to sit with her and assess the students at the same time….She would type up on her note-book [computer] and I would write my comments on paper. Then whilst the students were preparing for the next person to conduct their presentation, I would give her my notes and she would add into her feedback any additional points that I raised……So when the students had finished their presentations, the feedback matched to the criteria was done as well'. The team agreed that it could be an approach worth pursuing because it was a forum in which everyone in the class could benefit by listening to the presentations and asking questions. For validity purposes, the presentations could also be recorded or filmed and saved as evidence.

The discussion on presentations evolved into the notion of conducting assessments that allowed for concurrent feedback to be generated. It was suggested that the students could be given tasks via an assignment but asked to just make relevant notes and diagrams to address the tasks. Instead of producing a written report, the students may be asked questions using the forum of an interview. They could produce a report or generate notes in advance (depending on the assessment brief) to use as a point of reference when asked the questions by the teacher. The students could also make use of the whiteboard to help explain a point if asked to do so by the teacher.

Sean explained, 'You can conduct the interview and feedback and on the recording you would say, assessment one, such and such on, I don't know, bending moments, and then you can go through the interview and say that's it, very good [work produced by the student] or I've read through your report and it covers this, this and this criteria because [of this reason(s)]. And then, you didn't achieve the merit

because [of this reason(s)]. Any comments? And that is the opportunity for the student to feedback, which would be ideal to show that they understand what you have said'.

Sean's experience of receiving verbal feedback was that a lot more information could be given and expressed more clearly than if it was in written form: 'You will include more detail than you would if it was written. The phrasing of the voice and odd nuances, and just extra pieces of almost secondary information that you get from that mode of delivery is incredible'. This method gives the teacher the opportunity to re-phrase questions for clarity and probe for deeper knowledge and understanding. The interview can be recorded, either via audio or video, depending on the needs of the assessment. Verbal feedback and feed-forward can also be given and recorded using the same file.

In asking the participants to consider the discussions and the ideas that arose, there was a clear consensus that any monitoring and accountability measures imposed by the institution, regardless of the feedback given by the union members, would remain. Therefore, the demands on time from such initiatives such as team time could not be changed. However, the participating teachers demonstrated a degree of excitement about trying new methods of assessment and feedback. They also felt confident that, if the methods were feasible to implement, there would not only be the intentional outcome of creating a range of innovative assessment and feedback approaches, but the welcome, but unintentional consequence of saving time for the teachers.

I set about analysing the data gained from the discussion with the participating teachers and reflect on the progress made in cycle 3 of the AR thus far.

AR – Cycle 3 – stage 3 – Reflecting on progress

The frustrations highlighted by the teachers regarding the team time sessions reflected some of the tensions that developed because of the 'one size fits all' approach. Team time was a college initiative in preparation for an imminent Ofsted inspection visit. There were areas of teaching practice that could be used to measure the effectiveness of the learning and teaching in the FE classroom. All of the teaching staff involved in the teaching of HE programmes also teach on FE

programmes too, therefore, it was a mandatory requirement for all teaching staff to attend regardless of the teachers' professional development requirements or commitments. An unfortunate consequence of such sessions was that they took away more of the resource of time from the teaching staff to plan and develop lessons and assessments, and assess and feedback the students' work.

Upon reflection of the discussion with the participating teachers, the suggestions for approaches to assessment and feedback revealed creative possibilities. Conducting assessment and feedback together and using an appropriate method to record the process had great potential. It would not only make the process quicker, but it may remove any ambiguity and misunderstandings in the assessment allowing the teacher to clarify specific points instantly. As a result, there may be the potential to prevent some assessments being referred – adding to the improvements made in reducing referral rates in cycle 2.

I contacted the participating teachers and asked them to consider which methods they would like to incorporate into their assessment regimes and begin to design the assessment around their suggestions.

AR – Cycle 3 – stage 4 – Planning for action

I met with the participating teachers on 24th February 2017 to discuss their plans for assessment and feedback approaches for HE students. All of them had given considerable thought to the most appropriate approach for their subjects and particular topics that would be beneficial to the students and, where possible, be less demanding on time for the teachers themselves. The following approaches were agreed upon:

For the maths related units, Sarah and Jasmine decided to use closed book examinations to address the questions based on the Merit and Distinction criteria. However, following advice from the External Examiner for the awarding body (Pearson), Sarah and Jasmine had to ensure that there were at least two questions that addressed each of the Merit and Distinction criteria. The reason for this was that because the Pearson qualifications are criteria based, the awarding body felt that there could be a risk that a question could be misunderstood or misinterpreted, so by giving the students two opportunities to demonstrate their knowledge and

understanding, the excuse for not achieving the grade due to the students not understanding the question is removed. For the questions based on the Pass criteria, a combination of assignment and open book exams would be used.

Sean decided to use the interview technique for his Project Management and Design for Manufacture subjects. The reason for this decision was that the remaining topics were based on knowledge and justification of decisions which lend themselves well to such an approach.

Alan was very keen to try both the audio and video approaches for assessment and feedback. For Computer aided design (CAD), Alan decided to use Screencast-O-Matic to feedback to the students. It was an ideal medium for this purpose as he would be able to talk the student through their drawings. For the more science based Mechanical Principles (which is a contextualised version of Physics), criteria based presentations and audio feedback had the potential to be effective.

For the mechanical Principles unit, Jasmine decided to try using student presentations, but with criteria specific tasks. The students would need to prepare a topic around a set of criteria, which they would need to provide evidence of within the presentation. The process would be videoed as evidence. Peers would be able to ask questions at the end and the teacher could ask specific questions to clarify knowledge and understanding of particular areas of the topic to evaluate if the criteria were, achieved.

It was decided that the implementation of the new assessment and feedback approaches would be conducted during March 2017 and June 2017 (12 week period).

AR – Cycle 3 – stage 5 – Implementing and observing action

After the participating teachers completed a trial period for the implementation of the new assessment and feedback approaches with two groups of students, the following observations were made:

Closed book examinations (The views of the teachers)

The participating teachers, Sarah and Jasmine, were very positive about the approach. The questions were transferred directly from the assignment to an exam

paper without any adjustments necessary. There were two aspects to the exam that required some thought; the first was to write a second question for each of the criteria that was at the same level of difficulty but with a different context. The second was to calculate how much time the students would need to complete the examination which would be fair, but also challenge the students to solve the problems with an element of focus. As these challenges were addressed, the process went well.

The students had been informed that the Merit and Distinction questions were part of an examination, and this resulted in some students opting not to sit the exam and just concentrate on achieving a Pass Grade. Sarah explained why, 'a lot of the students prefer assignments because they just take them away [to work on as homework within a given time frame] and work with each other to work out the answers or scan the internet. Either way, they just do enough to get the answer but have not necessarily learnt how to do it [calculate the answer]. So, if you asked them the next week to do the calculation again, the majority of the time, they can't'. Jasmine added, 'those learners who prepare for the closed book exam have to know how to do the calculations to achieve the mark [grade], therefore they deserve the grade'. Therefore, those students who wanted the higher grades had to apply themselves more to earn it.

The added advantage for the teachers was that they were able to begin marking the exam as it was completed, which spread the load a little. Another and more significant advantage to this assessment approach was that only the students who chose to aim for the higher grades took the exam. Consequently, there were fewer exam papers to mark, and because those students who decided to take the exam chose to do so, very few so far had failed and had to apply for a retest.

Closed book examinations (The views of the students)

The students who prepared for and sat the closed book examinations for the analytical methods module offered a range of views. All 39 students who had the opportunity to sit the examination were invited to give their views on the assessment process. 23 of the 39 sat one or more of the closed book exams and I asked their opinion of the process. The general consensus was that it was a good measure of what they knew on the topics at that particular moment in time. They also agreed

that they had to prepare more than they would if they had to answer the same questions for a written assignment, which was done either as homework or as an open book exam. Student BI explained, 'I did loads more work into prepping [preparing] for the exam than I would have for the assignments. With the assignments you have the time to find the info on the questions and then you just answer them, no real thought. But with these exams, you know from the unit spec. [specification] what has to be covered for the merits and distinctions. So, if it's complex numbers, you're going to have to be pretty sure you can do the calcs. [calculations for complex numbers] or you've had it'. Student CL added, 'to be fair, I learned a lot more preparing for the exams than for assignments, so to be fair I think you earn the grades'. There was general agreement that sitting the exams was more stressful, but they felt that only sitting exams for the higher grades was a fair method of assessment, and meant that those wanting to achieve a pass grade did not have to do it.

I asked the remaining 16 students why they chose not to sit the examination for the higher grades. 8 of the 16 students said that they only wanted to achieve the HNC qualification and had little interest in the higher grades. The remaining 8 students said that it was because the grades had to be achieved through an exam rather than an assignment. When asked why, 2 students said that they found examinations too stressful and the other 6 students cited the fact that they would have to do too much homework to prepare. Student CD said, 'I suppose we've been spoilt a bit with the assignments because you can work on them with people or use reference materials which is easy. Exams? A bit too serious'. Student BR added that 'it's not for us but the guys who go for it and achieve the grades deserve them'.

Interview technique (the view of the teacher)

'I found the interviews surprisingly easy,' said Sean, 'All I had was the assessment questions in front of me and the criteria linked to them'. The assessment task was given as an assignment as normal, but the students were asked to research and calculate their answers and write these down in any way they wished in the form of notes. Then on an arranged day and time, the teacher sat with them individually and conducted a semi-structured interview. The interview was semi-structured to allow for probing and natural 'drifting' from the focus of the questions, and informal to

prevent the students feeling anxious or nervous. The interviews involved the teacher asking questions set in the assignment, the students answering and the teacher giving feedback. All of the interviews and feedback were recorded and saved as an MP3 audio file as evidence for moderation and given to the student as feedback. If the student preferred a paper copy of the feedback, the teacher used voice recognition software to type up the feedback section.

The advantages to this approach were that 'It's a relatively quick process. I think the longest interview over the sessions was about 6 minutes', said Sean, 'you are also able to get the students to clarify particular points if they are not very clear. If this was a paper-based assignment, a couple of them could have gone back to the students for not explaining stuff very clearly'. Sean also gave another advantage of this approach which was an unintended but positive consequence: 'What I found myself doing, especially with a couple of Distinction questions, after they answered them correctly, I started to broaden the scope a bit and ask deeper questions to find out what else they know or if they are able to apply their knowledge to different contexts. It was really interesting for both parties, I think'.

Interview technique (the view of the students)

I conducted an informal discussion with a haphazard selection of 11 of the participating students to gauge their views on the interview approach for assessment and feedback. In terms of preparation, the general view from the students was that they were able to spend less time in writing up the research. Student BK said, 'I found the interview to be very helpful in terms of preparation, a lot less time was needed for me to write down what I had researched in relation to the given questions. Choosing the right wording and structure for written assignments can often be frustrating and tedious. So, by scribbling down a few key words I was able to refer to these as a quick reminder during the interview which made the whole assignment experience more enjoyable'. Another general positive from the experience was that the students found it much easier to answer the questions and explain things in more detail. As Student AM explained, 'I feel an interview style assignment would be appropriate because an engineering mind would find it more difficult than someone studying English to write their thoughts down in a structured manner which demonstrates the point they are trying to make'. However, he added

that the interviewer would need to have a similar mind set (engineering in this case) to appreciate the nuances of what was being said. Student AP added, 'I often find it a lot easier to explain myself verbally rather than in written form. Thoroughly explaining yourself in written form is a skill in its own right, a skill which is not essential towards the education of an engineer'.

This approach proved to be popular among the students who experienced it, with the overall view that it was a better approach for them to communicate their thoughts and views than the usual written assignment approach. Student CI said that 'assignment-based assessment hinges around written ability which may hinder the performance of some students who may excel in an interview-based assessment'.

Audio/Visual (the view of the teacher)

Alan was very pleased with the approach, 'this method is tailor made for the CAD, and really easy and quick to do. I bet the longest piece of feedback that I did was four minutes and then with some I spent about thirty seconds editing them to take out the long pauses'. The feedback was done using Screencast-O-Matic, a programme that enabled the student to see what the teacher was looking at on the screen whilst they are provided with feedback, giving a visual reference too. The teacher was also able to highlight points on the drawing and use the cursor as a pointer.

Another advantage that Alan found was that he was able to use it as formative feedback too which he said sped up the process of draft submissions. Draft submissions tended to be looked at and fed back to the students on an informal basis. However, with this method of assessment and feedback, the students were able to get relatively detailed feedback which was accessible for the students at any time using a range of devices. Alan said, 'some students sent me stuff [assessment work or homework] to look at via email and I was able to have a quick look, offer some guidance and send it back as an MP4 file, so they didn't have to wait too long. It was pretty dynamic'. The files were saved on a database and available for the external examiner to view during their annual moderation visit. Alan suggested that this approach could be used for some of the longer Project reports.

Audio/Visual (the view of the students)

All 22 of the students who were asked to offer their opinions on the audio/visual feedback were very positive about it. They thought that more detailed feedback was provided and that being able to see the part of the drawings on their screens that the teacher was referring to was particularly helpful, especially with the more complex drawings. Also, being able to access the feedback on their different mobile devices was useful because a lot of them completed their work in a variety of different places both in and outside of the college environment. Student AC commented that 'it's handy to get to the feedback when you're working on your drawings because you're to see the exact places where Alan says it needs more work'. Student BJ added, 'the detail that you get from this feedback is much better, and there's less chance of you misinterpreting what the teacher says'.

There were some reservations with 3 of the students. Although they all agreed that the quality of the feedback was good and relatively clear, they felt that in some ways the feedback was too long. When asked why they thought that the feedback was too long (the teacher said that on average the feedback files were around 4 minutes in length), the reason given was that they did not want to have to search for a particular piece of feedback on the file; it was much easier to simply scan a word document for the relevant information. However, some other students commented that there was a timer running on the screen so for any points of interest they can make a note of the time.

Audio (the view of the teacher)

The audio feedback given to the students on their work was well received. As commented in the audio/visual evaluation, it helped not to be too scripted with the dialogue otherwise the personal 'feel' is lost. When done well, the feedback sounded like a conversation with certain nuances and pauses adding more meaning to the dialogue. Alan said: 'I really enjoyed using this method of feedback. You can get so much across in a small space of time'…… 'it took a few attempts before I got it right but once you've done a few it's really quite easy'.

This approach allowed the teacher to express their thoughts, views and ideas verbally in some depth, and contained a lot more information than would normally be offered in written form. The criteria/grades achieved for each element of the

assessment was also given if appropriate. Once completed, the recording was edited if necessary and then saved as an MP3 file to be sent to the student, and saved as evidence for moderation purposes.

<u>Audio (the view of the students)</u>

The students were asked to give their opinion on the audio feedback approach. The response from Student AR was typical of the classes: 'With regards to the audio marking I thought it was great. The possibility to include lots of feedback is there (good and bad) and from a student's point of view I think is very important. This constructive feedback is usually lacking with the traditional red pen 'tick in the box' approach'. It also appeared that that there was more clarity in feedback in this format. Student CK confirmed this, 'The audio feedback, when compared to written feedback, does give me a better understanding of what is right or wrong with my assignments, so it is my preferred form of feedback on assignments'. However, there was still a desire from 9 of the 23 students present to have some form of hard copy too, especially as confirmation of the grades. To address this, it may be worthwhile to have a printable template designed that shows the criteria/grades achieved for each assessment that can be sent to the students along with the audio file.

<u>Student presentations (the view of the teacher)</u>

Jasmine thought that this particular method of assessment went well. It allowed her the opportunity to sit and assess as the students conducted their presentations, and also offer feedback directly afterwards which was recorded on video as evidence, thus saving a lot of time. She said, 'it was a bit weird at first because I thought that I should be doing more than just sitting listening to them, but it was a good job [that the students did], it demonstrated a lot of work [that the students put into the preparation of the presentation]'. However, some of the students were uncomfortable with doing the assessment in front of the class. 'There were one or two who were uncomfortable about doing it [the presentation] in front of their classmates, and a couple who weren't keen on the camera, but they all got through it', said Jasmine, 'it's certainly something I'd do again'. Jasmine added that because she told the students the criteria they had achieved at the end of their presentation, it was best if just the pass criteria was assessed, because it would be unfair to be too judgemental on the higher grades in front of the students' peers.

Student presentations (the view of the students)

Most of the students found the experience 'good fun' and thought the assessment method was 'easier' than producing an assignment or report. 19 of the 23 students said it was easier to address the questions set for the task because they could use visual images to help explain specific points. Student BJ said, 'the PowerPoint was relatively easy to prepare and the bullets give you cues as to what to say and when, and with the diagrams I used, it made it much easier to clarify what I was trying to say'. Student CT agreed and added, 'yes, a picture tells a thousand words. And obviously if you weren't clear on anything, Jasmine asked me some questions on it to make sure I knew what I was on about [the topic]'. The use of the camera made 5 of the 23 students feel uncomfortable. 'I don't know, there's just summat (sic) about it that puts some pressure on you. I could never be an actor!' commented Student CA. Student CT's view on the use of the camera was that 'we had a choice. Jasmine said if we don't want to do it that would be fine, but we would then have to do an assignment to cover the criteria, so I thought, ah, well, everyone else is going to [do the presentation]'. However, 4 of the 23 students did not really like to speak in front of others. One of these, Student BB said, 'I have never been that comfortable talking in front of others, it's just a confidence thing, I mean, these guys are mates, but I know that I need to persevere because it will hopefully help me gain confidence. And let's be honest, I need to get over this, I'm going to have to do this [conduct a presentation/speak in front of an audience] in the future at some point'.

AR – Cycle 3 – stage 6 – Reflecting and evaluating change

The first research question discussed with the participating teachers raised concerns regarding the introduction of 'team time', weekly sessions of CPD which did not appear to be targeted for specific teams or departments in any way. Therefore, many sessions offered help and advice for improving aspects of teaching, learning, assessment and online course management software training that were often not necessary for specific teams. Therefore, the sessions were not deemed useful to the teams, they felt patronising at times and more importantly, very time erosive. However, because the teachers involved in the study also have responsibilities and teach on FE programmes, they had a mandatory obligation to attend such sessions.

In considering different teaching and assessment approaches that could be applied to create a positive change in the HE environment, the discussion generated some interesting ways of assessing the work of the students and giving feedback. As a result, the methods used for assessment and feedback received positive responses from both the students and the teachers. In most cases, the feedback was received in a format that could be accessed on a range of devices including mobile devices and could be replayed if the student desired. From the teacher's perspective, the approaches chosen to assess the students' work and provide feedback were relatively easy to adapt to and use, and perhaps more importantly, not as time intensive as the more traditional methods such as written assignments and feedback.

The pedagogic impact of the new approaches trialled for cycle 3 of this study seemed to make the process more 'contemporary' and less time consuming and was well received by teachers and students alike. However, the full impact on pedagogic practice would need to be considered after evaluating the effects of the actions from all three of the cycles to judge how they addressed the ambition of the Destiny phase.

4.7 AI – Destiny

Upon completion of the previous phases of the research process, I was able to consider if there was a positive shift in practice in the HE classroom as the study had intended. Firstly, I looked at the effectiveness of the research process itself. I believe the AARM had proved itself to be an effective research model that was ideal for this study. It may have been possible to have used AR on its own for this study, but I do not believe that it would have been as effective in identifying areas for improvement, which the AARM specifically highlighted. However, it is important to emphasise how well-structured Townsend's extended AR model (see figure 3.1) was in ensuring that the actions were well considered and targeted at specific areas. Its design includes specific points in the cycle in which we are expected to refine ideas, reflect on the approach and progress and evaluate what had been achieved. So, from an operational aspect, Townsend's AR was ideal.

Using AI as the main framework for the AARM and embedding the AR within it worked well. AI was used to identify areas of the learning and teaching experience

that could be improved. Using a range of methods to discover the current learning and teaching experience and identify ideals (dreams) for future practice, gave us a source of data that was the focus for the AR to trial and improve new approaches in the classroom. I believe that the two elements of the AARM complement each other, and this is a research model that may be a useful option for future researchers to consider using.

As a result of the study, different pedagogic practices were implemented that created a positive change in the HE classroom. The development of the ELT model has shown that by adding structure to the way topics are taught, based on the views and experiences of the students and teachers and underpinned by the literature, there can be a positive shift in the learning experience. Such a statement may seem unsurprising. However, it is important to reiterate that a major factor that seemed to be affecting the students' learning was the lack of time available for the teaching of the topics. Knowing that the time available to teach would not change, a creative solution was needed. As a result, a very useful technique was considered and trialled; 'slowing down to speed up'. The reasoning for this approach was that it allowed for the key principles (fundamentals) of a topic to be taught at a slow and purposeful pace to allow time for the students to assimilate information and gain a better understanding. Therefore, having a clearer understanding of the topic's fundamentals, the students were then be able to cope better as the lessons speeded up. In truth, this approach would benefit a majority of topics regardless of time constraints or the programme levels being taught, allowing the students to digest information slower and reflect.

Another aspect of the ELT model that appeared to have contributed positively to the learning and teaching experience was the integration of a social constructivist element to the lessons in the form of Vygotsky's ZPD (1978). By actively encouraging the students to discuss their views, concerns and experiences with the teacher and each other, two things were possible: the student can be offered support and advice from either the teacher or their peers that can help them figure out solutions. Alternatively, by listening to the students' discussions and views, the teacher can identify misconceptions and misunderstandings which can be clarified quickly. This is particularly important when working under time constraints.

Therefore, help and advice is applied when and where it is required rather than time being wasted by the students following the wrong lines of inquiry.

The structure of the ELT model, the process of 'slowing down to speed up' and the integration of Vygotsky's ZPD (1978) when teaching topics, were all developed to ensure that the students were able to assimilate information that they can process during a period of reflection. Time in which the students can deliberate over what they have experienced, what they know and the knowledge they construct from that is very important. Being able to share ideas and thoughts with their peers was also extremely valuable as part of the learning experience.

4.8 Conclusion

The research conducted as part of the AARM generated iterative changes for each stage of the AR cycle that resulted in an improvement in pedagogic practice benefitting both students and teachers. During the cycles, the ELT model was developed using the views and experiences of the participants. At each stage, an informed decision was made that created positive change. The use of questionnaires was appropriate for the students as it gave them an opportunity to be direct in their views and thoughts. At the same time, using semi structured/unstructured interviews with the teachers allowed them the scope to discuss their experiences, opinions and views as a group, thus sharing their perspectives in a supportive environment.

The 'Discovery' and 'Dream' phases informed the development of the ELT model used in cycle 1 of the AR (see chapter 4.4). The model was deemed effective by the participating students and teachers, but the pace of the lessons needed to be addressed. A process of 'slowing down to speed up' was decided by the teachers to address the issue of 'time' and consequently 'lesson pace'. This was trialed and the responses from the participants indicated an improvement in their learning experience, evidenced in the improvement in referral rates which suggested a better understanding of subjects in cycle 2 of the AR. Cycle 3 built on the previous cycles by focusing on aspects of pedagogy that impact on teachers' time and areas considered for attention were assessment and feedback. Following discussions with the teachers, ideas for different approaches were suggested. The new approaches were trialed, and data was obtained from both the students and the teachers regarding the effectiveness of the approaches. The conclusion was that the new

approaches to assessment and feedback were not only more time effective for the teachers, but the students were generally positive about their experiences. The 'Destiny' showed that the adjustments to pedagogic practice, which included the development of the ELT model, generated positive change in the HE in FE classroom. More general discussion regarding the process and the results follow in chapter 5.

CHAPTER 5

Discussion

5.1 Introduction

In this chapter I restate the purpose of my study to address the effects of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment. I discuss how the three AR cycles contributed to the development of the final Emergent Learning and Teaching (ELT) model. Recommendations for the implementation of the ELT model across disciplines is then discussed along with its generalisability for use more broadly across education.

<u>The purpose of the study</u>

The focus of this study was to address the effects of marketisation on pedagogic practice in the HE classroom in an FE context and consider ways to create a positive change within that environment. During the study, I found literature that focused on the teaching of HE in FE and the potential benefits and effects of such a partnership, some acknowledging how the ethos of FE could potentially affect the teaching of subjects and the learning experiences for students. There have been considerable research and studies conducted that have used and evaluated the effectiveness of specific learning models in the classroom. However, what I wanted to do with this study was to consider a range of evidence, studies and literature to actually see if it would be possible to create an environment that could work within the constraints of a marketised system, and produce a high-quality experience for both the teacher and the student. The key findings in my quest to achieve this will now be discussed.

5.2 The final form of the ELT model

As a result of the completion of three AR cycles, used for the 'Design' phase of the AARM (see section 4.3), I now outline how the different aspects that emerged from the research questions, came together in a final, amended learning and teaching model.

Cycle 1 of the research (see section 4.4) was developed to address research question 3; can different teaching and assessment approaches be applied to create

a positive change in the HE in FE environment? It was also designed to address research question 4; can a revised pedagogic approach be developed to encourage deeper learning and understanding of topics in the HE (in an FE context) classroom? I focused on teaching methods that students considered to be effective in helping them learn topics well and give a deeper understanding. The responses from student questionnaires and research conducted for the literature review identified appropriate learning and teaching approaches that could be useful in an HE in FE context.

Kolb's ELC (1984) was used as the initial template to build upon (see section 2.4.2). The social constructivist approach from Vygotsky's ZPD (1978) was added which allowed for a supportive environment to encourage discussion between both teacher and peers to express their learning and understanding of topics (see section 2.4.1). Finally, elements from my research for deep and surface learning were included in the design (see section 2.4.3), which completed the ELT model (see figure 4.2).

Responses from the participating students suggested that there was a positive improvement to the learning experience, although there were still issues with the pace of the classroom delivery due to time constraints. It was also apparent from the responses that creating an approach to encourage deeper learning and understanding may be problematic to quantify. However, the students stated that they had achieved a clearer understanding of the topics, which I concluded was a more realistic ambition when teaching HE in FE for this study.

Continuing to develop the model further and make the learning experience more positive, cycle 2 focused on the issue of 'time', by using a 'slowing down to speed up' approach (see section 4.5). Instructions were added to the model to act as a prompt to the teacher regarding the pace to deliver the lessons throughout the cycle. This approach improved the learning and teaching experience further and showed an impact on the referral rates for the assessments. The referrals were down from 9-12% (2014/15) and 8-11% (2015/16) to 3%. Feedback from the students in relation to the new approach was positive, indicating that they had a more enriching learning experience.

Cycle 3 of the research continued to focus on finding different teaching and assessment approaches to create a positive change, this time placing emphasis on research question 2; how teachers experience monitoring and accountability when

teaching HE (in an FE context), and what this has meant for learning teaching and assessment (see section 4.6). Discussions with teachers highlighted various aspects of their roles in which they believed how they were monitored, and the level of accountability had increased. They recognised that a reduction of such accountability measures was unrealistic and that time to prepare for lessons and in particular, to write and conduct assessments was always likely to be demanding. Therefore, a solution was needed that made better use of time. Assessment and feedback were areas that had the potential to be designed differently and be less challenging on time.

The new assessment and feedback approaches trialled were generally designed to be a more interactive experience, enabling students and teachers to identify what had been learnt and understood. The feedback was also given as immediately as was possible using electronic methods to allow students access to it through a number of platforms. From the teachers' perspective, each method was new and required some practise initially, but the time spent assessing and feeding back (which were often done concurrently with the student), and the immediate recording of the assessment and feedback, created a substantial saving of time.

There has been a positive response from all of the participants in relation to the impact of the revised approach to pedagogy on student learning. Based on the iterative changes that took place over the three cycles and reflection of the process, the final version of the ELT model was developed (see figure 5.1).

figure 5.1 – <u>The final Emergent Learning and Teaching (ELT) model</u>

Emergent Learning and Teaching (ELT) Model	
Foundation Building **(fundamentals)**	**Interactive Lecture** The teacher introduces the fundamentals of the topic. These are the primary principles or core elements on which the topic is based that the students will need to understand initially. This approach should prepare the students to develop a better comprehension of the topic's content as this becomes deeper and more challenging. **It is important that this stage allows for student interaction and time to digest the information. Therefore, <u>the pace of the lesson needs to be slow and purposeful.</u>**
Visual Representation **(demonstration)**	**Demonstration / video etc** This could be a demonstration such as a stage-by-stage example of a mathematical calculation, a process conducted by the teacher, or a video or simulation. The demonstration allows the students to see (visualisation) not just the stages or process, but any associated difficulties encountered, and clarify any misunderstandings and misconceptions. **<u>Continue with a slow and purposeful pace of delivery.</u>**
Experiential Learning **(engagement)**	**Practical Application** The students are given the opportunity to replicate the concept or process that was demonstrated by engaging in hands-on practical tasks to feel the experience for themselves (Konak et al., 2014). This can be done individually or as groups. During this stage the teacher observes the students' actions and offers guidance, acting more as a navigator rather than a facilitator. The students are encouraged to express their thoughts and views of the process through discussion with their peers and the teacher to develop understanding and to highlight any misunderstandings. **Appropriate support and guidance should be given to all students if required.**
Knowledge Construction **(interpretation)**	**Further Tasks** The teacher takes a more central role and will add more content/depth to the topic and encourage the students to engage more collaboratively with the content and tasks. Once again, this can be done individually or in groups. Further tasks are given to the students as active reinforcement for their learning and to further develop their understanding. Such tasks will increase in difficulty to challenge the students to draw on previous experiences and construct their own knowledge to make sense of the experience (Kolb, 1984). **Support and guidance should be proportionately removed by encouraging the students to make connections.** **<u>The pace of the lesson may now speed up.</u>**
Concept Deliberation **(reflection)**	**Reflect on experience** The students need the opportunity to have time to reflect on their experiences during the lesson. This needs to be instigated by the teacher and may involve tasks or a discussion which may be done with the teacher and/or the students' peers to share thoughts and discuss how they found the experience, what they believe they have learned, what they found difficult in an attempt to clarify any areas of uncertainty. It is also a good opportunity for the students to discuss the skills that they have used for the tasks that are transferrable (employability). **<u>Sufficient time must be given for reflection and discussion.</u>**
Knowledge Confirmation **(validation)**	**Assessment** The assessment methods used to check for knowledge and understanding should: have a degree of interaction and flexibility that allows the students to express what they know and allow the teacher (or assessor) to probe for clarity; be specifically directed to what the students need to demonstrate knowledge of about a topic; offer feedback that is immediate and/or available quickly to the students from a range of mobile devices. **Use a variety of assessment approaches to test for knowledge and understanding of the range of topics throughout the module/unit.**

5.3 Implementing the model across disciplines

This study is one of very few that has focused on the teaching of HE programmes in the context of FE and one of an even smaller number of studies that has focused specifically on the FE problem of monitoring and accountability, and the effects that it has for students' learning. The literature acknowledges this problem and expresses concerns regarding the nurturing of an HE culture within an FE context, from both an academic and policy perspective, and the risks of the FE culture impinging on HE programmes (Harwood and Harwood, 2004; Golding and Griffiths, 2008; Bathmaker and Thomas, 2009; Turner et al., 2009; Lea and Simmons, 2012). The literature also recognises the demands on teachers' time as regards the significantly high number of teaching hours imposed on teachers (Harwood and Harwood, 2004), and the fact they are expected to teach on a range of FE programmes, as well as their HE commitments (Young, 2002; Harwood and Harwood, 2004; Turner et al., 2009). Within this study, I have been able to conduct research to identify the effects of monitoring and accountability on pedagogic practice and take actions to create a more positive learning and teaching environment.

As a result of this study, the ELT model was developed to be used in the HE classroom (when in an FE context). The model is more than a list of prompts to encourage good teaching. It is a process that has been developed and trialled (see chapter 3) with the views of students and teachers at the core. Their experiences and views have contributed greatly in the way the model has evolved. Each stage of the model has been carefully considered to ensure that the students get the most from the learning experience. The practical implication of the ELT model is that it appears to reduce the negative effects that result from the demands on time that the teacher faces when planning, preparing and delivering lessons. By using the new model, students have a more positive learning experience in the classroom which they believe gives them a better understanding of topics compared to their learning experiences before the implementation of the model. Based on the structure of the ELT model, and the fact that it is used for each topic, there is potential for the model to be used in HE classes across other disciplines and possibly for some level 3 FE programmes, such as Access to HE.

A core finding that came from the study was the connection between the students' learning and the time allocated for lessons to process the knowledge. There were two important discoveries made in the study in relation to the issue of time. The first was that unless there was enough time allocated for the learning and teaching process, the students will not necessarily be able to achieve a *deeper* understanding of a subject or topic. It was generally acknowledged by the students that this was the result of two factors; too much material/information being given by the teacher in a short period of time, and the material being delivered at too fast a pace (Ramsden, 2003; Biggs and Tang, 2007; Howie and Bagnall, 2013).

The second discovery which has been incorporated into the ELT model was that if we slowed the pace of the lesson down when teaching the topic fundamentals, in other words when teaching the primary principles and core elements on which the topic is built, the students are able to get a clearer understanding of the topic even when the pace of delivery from the teacher speeds up. Therefore, as a result of this study, we were able to demonstrate that a 'slowing down to speed up' approach to learning and teaching can be very effective in helping people learn. Once again, due to the nature of the FE sector (regardless of whether teaching HE within it), and the constraints that are embedded within it, the ELT model has the potential to be applied across other disciplines.

Using a social-constructivist approach in the HE classroom is not a new concept, but there is little literature based on the use of Vygotsky's ZPD with adults in the HE classroom. It was important to have an element of support built into the learning and teaching model, and with the collaborative approach of ZPD, and the vocal aspect encouraging students to say their thoughts out loud, help could be offered very quickly. The same approach was used with HE students as with children for whom the ZPD was originally researched and analysed. The students were given the information or a task that challenged them to develop their knowledge further, therefore, the level of the task was within their capability, either by themselves or with the support of the teacher (in the form of questions), or from discussions with their peers where they were able to share opinions, theories and experiences (Vygotsky, 1978; Chen, 2012; Schreiber and Valle, 2013). The ZPD is about allowing the student to construct their own knowledge through collaboration with the teacher or their peers (Tummons et al., 2013). Students are able to be part of a social

educational environment in sessions which need to be managed by the teacher, but I believe the sharing of ideas and thoughts and the discussions that happen as a consequence create a far more valuable learning experience. Along with the participating teachers, I thought that it was a very effective method of support which suited the students and the level of their studies effectively. Rather than the classroom being a place of silent self-study, it becomes a place of collaborative endeavour that will generate a positive learning experience. For that reason, the ZPD should be considered more for HE classrooms.

The ELT model has been used with a degree of success in the HE classroom, within the constraints of the performativity measures that impinge from FE. Students responded positively to the changes in their teaching and learning experiences that had had the opportunity to share during the study. They accepted that they had a better understanding of topics than before, and the teachers agreed that the new assessment and feedback approaches were less time consuming and so reduced some of the burden on their workload. However, the study does not claim that a deep learning experience was achieved. There was simply not enough time for the teacher to spend with the students in the classroom to enable such a depth of knowledge to be developed. This raises questions about the FE sector and the effect that 'market-inspired managerialism' (Hogan, 1995: 226) has on the quality of education.

The more demands that are placed on the sector and are cascaded down through management layers (often ending with the teacher), the more potential there is for a more surface learning approach of teaching to the test (Marton et al., 1984; Enwhistle and Ramsden, 1983) – effectively adopting a 'banking system' (Freire, 1972) of education. Literature suggests that the teachers' performance is monitored by many layers of management to ensure a wide audit trail for quality assurance (Green, 2013; Ball, 2003), but such performativity measures are producing an indefensible level of compliance (QAA, 2003). The belief that this improves the quality of education in FE is difficult to support; it seems more aligned to what Foucault (1980) regarded as a 'truth', which is not necessarily 'absolute truths', but something that the teachers are led to believe to be true.

I recognise that critics of the study could focus on it being conducted in a specific curriculum area with a small group of teachers and students from a particular profile. I would argue that it was done in an area where I was, to a degree, able to ensure that the momentum of the study was maintained from start to finish without any distractions. However, I believe that there is real scope to widen the research into other curriculum areas in FE.

I am confident that the ELT model can be implemented across all disciplines and will show benefits to the teachers in relation to their workload, and create a more positive experience for students in the HE classroom. The structure of the model is easy to follow and can be applied to most topics. The additional guidance offered in relation to the lesson pace is also useful for the teacher planning timings for their sessions. It would certainly be worthwhile for other curriculum areas to trial the ELT model in the classroom for a term/semester and evaluate any benefits gained for both the students and teachers.

What has become clear from the study is that many of the issues in terms of monitoring and accountability measures and the effect on the learning in the classroom is an FE issue. The study focused on HE taught in an FE context but the demands on the teachers (the same teachers who teach on the HE programmes) also manifest themselves in the FE classroom to some degree. Therefore, I see no reason why the ELT model cannot be applied in some level 3 programmes where the students are asked to engage more with their learning and develop evaluation and critical analysis skills. The Access to HE programmes may be an ideal platform to use the ELT approach because it prepares students by developing their academic skills for university.

Although the programme used for this study was a BTEC, I do not believe that the ELT model is only suited to that. This approach for the HE classroom not only provides specific progressive stages for learning and construction of knowledge to develop, but also offers a structure with changes in activities and pace that may be useful for most qualifications offered by different awarding bodies. The support built into the model is applied using Vygotsky's ZPD, therefore, encouraging students to express their thoughts and views with the teacher and their peers, engages a social constructivist approach to learning.

This study may provide some evidence to policy makers that the neo-liberal approach to governance in the FE sector and the monitoring and accountability measures placed on teachers does have a causal effect on the learning that takes place in classrooms. Consequently, as long as such constraints remain, the ELT model offers a template for teachers, and guidance on a better way to structure the lessons to enable topics to build from fundamental core principles in a more controlled and social-constructivist manner. Understanding the need for using the ELT approach in the classroom, and the benefits highlighted in this study, policy makers and senior leadership teams should commit to investing in the availability of support materials, technologies and equipment that may help the teacher in the classroom to provide as positive a learning experience as possible, regardless of any performativity measures imposed and the constraints on teaching time.

The practical implications involved in trialling the ELT model across other programmes within my own curriculum area and eventually into other curriculum areas across the college centre around professional development. I believe that there may be a need for CPD sessions to be conducted with all teaching staff in all of the curriculum areas before they adapt the model. Firstly, I believe that everyone would benefit from learning about this study, its context, the decisions that were made and why. This gives a better understanding of why the model was used and the benefits gained from it. Secondly, teams from other areas need to have an understanding of Vygotsky's ZPD and why it differs from what is termed as 'scaffolding', especially in the way that it is interpreted by Bruner (1978). The ZPD is a very important element of this model in the way students are expected to engage with the teacher and their peers. The stages of the ELT can then be explained in detail with particular emphasis given to the pace of the teaching.

Additional CPD sessions/workshops could be offered to give teachers an overview of the assessment and feedback methods that may be adopted, and teams given training, if required on any appropriate software to apply the methods into their own practice. It may also be useful to demonstrate how to convert the ELT model into a lesson plan (see Appendix 8). Since the teachers would benefit from the new pedagogical approach, they would see the advantages of engaging in the process rather than considering it 'training that was not relevant or useful', as Alan stated, during the interviews for cycle 2 (stage 2) of the AR (see section 4.5).

5.4 Conclusion

The AARM used as the methodological approach to identify and trial potential learning and teaching approaches in the HE in FE classroom proved to be effective in generating the ELT model that crated a positive change in the HE classroom. The final version of the model, the result of iterative changes over three AR cycles, addressed the teaching approach and lesson structure, the pace of the learning experience, using a 'slowing down to speed up' approach, and the development of interactive and flexible methods of assessment and feedback. Although it is acknowledged that time is still an issue to some degree, the new approach demonstrated that within the scope of this study, a more effective (such that it produces a desired result) learning and teaching experience can be achieved within the constraints of a marketised system of performativity and managerialism.

The data collected throughout the study and the results achieved give me the confidence to recommend implementing the ELT model across other disciplines. This will give the opportunity to test its generalisability, initially with HE in FE programmes but much more broadly, widening the scope to level 3 (FE) programmes. However, as stated earlier, there would be a need for those willing to trial/adopt the approach to undertake training initially to get the most from the ELT model. However, if successful in its implementation, I believe the benefits of a more positive learning and teaching experience for both students and teachers within the HE in FE and FE environment will be rewarding. Further conclusions and recommendations are given in chapter 6.

CHAPTER 6

Conclusions and recommendations

6.1 Introduction

In this chapter I identify the key findings and how they have addressed the research questions in relation to the effects of marketisation in the HE in FE classroom. The effect of the revised ELT model is also considered. The research design and process is reviewed, reflecting on its strengths and limitations. I suggest how the ELT model could be implemented across disciplines in the HE in FE context and offer recommendations in doing so. Following this, I consider areas for further research into the effects that the FE sector has on HE programmes that are delivered in them and conclude by suggesting how this study has made an original contribution to knowledge.

6.2 The key findings

Research Question 1 - *What kind of methodological design/approach would be best used to investigate a complex environment such as the HE (in an FE context) classroom?*

Before the study could move further, I needed to consider the most effective way to investigate such an environment. This first research question was designed to encourage critical thought on how such a challenge could be achieved. Adopting an epistemological stance of pragmatism allowed me the freedom of working with an emergent research approach to choose the most appropriate form of data collection for the phenomenon (Onwuegbuzie et al., 2009). In addition, the ideology of such a pragmatic stance supported my approach in creating and trialling practical ways of addressing specific areas of interest and experience the consequences of such changes (Gray, 2014; Howell, 2013).

In pursuit of addressing the 'can' in the research questions: *Can* different teaching and assessment approaches be applied to create a positive change in HE in FE? And *Can* a revised pedagogic approach be developed to encourage deeper learning and understanding of topics in the HE (in FE context) classroom? I needed an

approach that was emergent, yet also allowed me to try a range of practical approaches in the HE classroom (Reason and Bradbury, 2008). Due to the scale of the research which involved many participants (students and teachers), and the potential complexity of the HE classroom, the collaborative nature of AR with the different worldviews of its participants made it an ideal choice (Shani and Pasmore, 2010; Reason and Bradbury, 2008). Fully aware that conducting AR involves a 'series of commitments', observations and reflection to generate a solution or alternative approach to a phenomenon (McTaggart, 1994: 315), I wanted an AR model that had a degree of flexibility - Townsend's extended model of action research (see table 3.1) allowed for phases to be repeated and a change of focus to be accommodated (Townsend, 2010). I was confident that AR was the correct approach for trialling solutions for change in the HE classroom but felt that I needed a more strategic approach to focus the research in the areas that impacted the students' learning.

As highlighted in the literature review, the monitoring and accountability measures imposed on FE teachers are the result of a marketised sector (Ball, 2003). Appreciative Inquiry was suited for this study because it was a methodological approach that was designed for improving businesses, therefore, had the potential to work well with an educational sector which is now managed using a corporate style of governance (see section 3.3.2). Although it may be argued that an educational establishment is not a business, the reality is that across all sectors, educational establishments have been transformed into more corporate organisations as a consequence of the marketisation of the sectors, and the performativity measures that play an integral part. AI is collaborative, like AR, and allows for practical solutions, but more importantly, concentrates on positive aspects of an organisation rather than its problems (Bushe, 2012; Cooperrider and Srivastva 1987). As an approach, AI is designed to open up discussion with participants to discover the current processes that work well, how they could be done better, and then to introduce changes to practice or processes that lead to the destiny of a positive improvement (Kelm, 2011; Whitney and Trosten-Bloom, 2003). By using AI as the overarching approach and AR to operationalise the trials in the classroom, I felt that the two models complemented each other. I was able to merge the models relatively easily because AI was structured to conduct reconnaissance, and AR designed to

carry out any actions. The result was the Appreciative Action Research Model (AARM) that became my methodological approach (see figure 3.4).

In practice, the AARM proved to be an ideal approach for the study. During the 'discovery' phase I arranged for a group meeting/interview with the teachers to discuss two affirmative questions that I had devised. The questions were positive in nature, in line with the philosophy of AI, to encourage the teachers to feel more energised to engage in the discussion (Kelm, 2011; Reed, 2007; Bushe and Coetzer, 1995). The affirmative questions were carefully chosen to set the focus and direction for the study (Kelm, 2011). The questions asked: 'how the effects of monitoring and accountability could be positively addressed in the classroom' and 'how pedagogic practice could be changed to encourage higher order thinking skills and deeper subject knowledge'. Interestingly, after only a short amount of discussion on each positive question, the conversation began to drift into the negative aspects of each question which I wanted to avoid (Whitney and Trosten-Bloom, 2003). However, contrary to the philosophy of AI and the proponents of it in the literature, such as Bushe (2012); Kelm (2011); Reed (2007); Whitney and Trosten-Bloom (2003); Goldberg (1998); Bushe and Coetzer (1995); Srivasta and Cooperrider (1990), I realised that I was getting a much richer body of data from the discussion when addressing the 'problems', and the teachers were more engaged and constructive. My only role was to facilitate the discussion, making sure that the conversation did not stray away from the focus of affirmative questions. Following such a frank discussion, and identifying what the real issues were, I saw a degree of clarity between everyone emerge when they were asked to describe their utopian 'dream' – interestingly, everyone responded positively, offering many suggestions of how this could be achieved (Reed, 2007). I appreciate that the use of AI, when conducted as it is designed by ensuring that a positive core is maintained, works when addressing organisational and operational efficiencies and processes. However, within a complex educational context, the focus on a positive core seems to be less effective and as experienced in my discussions with the teachers, risks missing the fundamental problems which seemed to be common for all the teachers I interviewed (see sections 4.21 and 4.22).

For logistical reasons and due to time constraints, I used a questionnaire to ask the participating students questions about their learning experiences. Once again, they were based on the positive aspects of the 'discovery' and 'dream' (Whitney and Trosten-Bloom, 2003), and to avoid any ambiguity, they were worded carefully (Goldberg, 1998). For the 'discovery', I wanted to know the methods that students considered effective in helping them learn. For the dream, I decided to ask them to recall a time during their education where they believed they had gained a deep understanding of the subject matter. To gain deeper insight into their views, I also asked them to explain why. These questions were designed to highlight what works well (Bushe, 2012; Srivasta and Cooperrider, 1990). A third question focused on the factors that made it difficult for them to gain a deep subject understanding. It may not have been completely in the spirit of the AI philosophy, but it was a question that I believed would provide useful data and possibly offer a degree of triangulation with the previous two questions. The data that was generated from the questionnaires was very useful and eventually contributed greatly to the actions that were taken for cycle 1 of the AR (Kelm, 2011; Goldberg, 1998). Once the data from the 'discovery' and 'dream' phases were completed, I was able to identify themes and use this to inform the design phase of the AI in which different pedagogic approaches in the HE classroom were developed and trialled (see sections 4.4 to 4.6).

Three cycles of AR were used for the study that involved the participating teachers and students working collaboratively and as equals with me to identify and discuss interventions (Whitelaw et al., 2003). All of the participants were given equal status and the value of their views, which were often from different philosophical standpoints, was important to the success and validity of the study (Whitelaw et al., 2003). The knowledge and data accumulated from the 'discovery' and 'dream' phases of the AI from both the teachers and the students influenced the design of the ELT model, developed and trialled during cycle 1 of the AR, the change to the structure of the lessons for cycle 2 and the implementation of new assessment and feedback procedures for the final cycle.

Townsend's (2010) extended AR model (see table 3.2, chapter 3) proved to be effective as a tool for discovery and change and although each stage of the cycle was followed sequentially as designed (see chapter 4), these were at times

overlapping, making for a less rigid process (Townsend, 2010, 2013) which allowed an element of fluidity to the study. It was also important that I ensured all stages of the cycle were conducted with a purpose and were carefully observed and reflected upon (McTaggart, 1994). What I found particularly valuable when using Townsend's (2010) model was its insistence by design for regular reflection of the cycle's focus, and reconnaissance throughout the process, which gave some flexibility for changes if I needed to make small refinements to the focus of the actions (Townsend, 2010, 2013).

The data collected from the participating teachers and students, such as their learning preferences for cycle 1 of the AR, the effects of the ELT model in the HE classroom for cycle 2 and the success and/or consequences of the assessment and feedback methods applied for cycle 3, were all used to build up lines of inquiry. The specific data collected for each of the AR cycles were interpreted, reflected upon and pieced together and incorporated towards a new or modified model or approach (Denzin and Lincoln, 1999). My pragmatic stance gave me the freedom to adopt modes of data collection that were considered to be the most effective for each stage of the research, and all such modes of data collection were given equal value (Onwuegbuzie et al., 2009; Denzin and Lincoln, 1994, 1999). For this study, the methods that were used to collect the data complimented each other and were in no way conflicting approaches as warned by Hammersley (1999). For cycle 2 of the AR there was a change of focus from the learning and teaching approaches to that of addressing 'time' and the pace of the lessons. It was decided to keep the ELT model without modifications as the data reflected positively on it, but to incorporate changes of pace at specific stages of the model.

The findings suggest that the combination of AI and AR incorporated in the AARM was an ideal methodological approach to investigate such a complex environment as the HE in FE classroom. By design, the AARM was able to oversee the study from the beginning; generating data from the participants relating to their experiences of the learning and teaching through the 'Discovery' and 'Dream' phases. The 'Design' phase allowed for actions to be taken using AR cycles based on a continual loop of feedback/data from the participants that led to a solution ('Destiny'), which, although not the absolute ideal, generated a positive change within the HE in FE environment.

However, if the model was used in a more complex environment, the AARM may need to be revised in consideration of the context.

<u>Research Question 2</u> - *How do teachers experience monitoring and accountability when teaching HE (in an FE context) and what has that meant for learning teaching and assessment?*

The second research question is specifically focused on the teachers who teach HE in FE institutions and not those who teach HE in HEIs. Relatively little research has been conducted into teaching in FE and even less in relation to teaching HE in FE. HE in an FE context is very different to HE in a HEI so it is important to consider if the FE setting has an effect on the HE provision (Gale et al., 2011). If FE does influence the HE provision, how does it impact the teaching and learning process/experience in the classroom?

The interviews conducted with teachers for the study recognised that as a result of the marketisation of the FE sector, performativity measures such as targets and comparisons with other institutions have been imposed to make the teaching staff more accountable for the success of their students (Ball, 2003). Added to these quality assurance measures, teachers also found themselves being monitored using methods such as appraisals, lesson observations and internal and external inspections (Green, 2013; Ball, 2003). However, as the responses from the teachers indicated, the consequence of such measures seemed counterproductive because it reduced the time available for the teachers to plan appropriate tasks for lessons. A particular area of contention raised during the interviews was that of lesson observations. The teachers were in agreement that the approach needed to be reviewed for a number of reasons. Alan complained that such observations were not, as the staff were constantly told (what Foucault would refer to as 'truths'), for the benefit of the students by improving the quality of the provision, the learning experience and possibly the opportunity to achieve high grades, but to satisfy Ofsted criteria in case there was an inspection (Foucault, 1980). If that was the case, it was a concern if used in the HE classroom because the pedagogic approach in HE was based on uncertainty; challenging the students to question what would happen if A plus B did not equal C? Such an approach generates discussion, reflection and debate, something an Ofsted style lesson observation risks stifling (O'Leary, 2013).

Yet, although Ofsted did not apply to HE, the QA department in this and other FE colleges used the observation template across all teaching areas. Paul questioned why the observations were graded when the criteria against which we were measured changed for each observation, focusing on different aspects and approaches of teaching and the student learning experience, seemingly dependent on what the policy makers considered important at a particular point in time (Ball, 2003; Shore and Wright, 1999). Sarah argued that being able to observe colleagues or be observed in the classroom by peers would be more useful, like that conducted in many universities, rather than being judged by a manager (Gosling and O'Connor, 2009; Nasta, 2011).

During the study, a new cross-institutional initiative known as 'team time' was introduced. It was a weekly CPD gathering of all teachers in preparation for an imminent Ofsted inspection. The QA department set the agenda and the tasks, and the managers in each department had to lead the sessions. The teachers interviewed for this study complained that it was a 'one size fits all' approach which in many cases was not relevant to their level of students. This mandatory initiative was 2 hours in length which took up time that the teachers needed to dedicate to their lesson preparation and the marking of assessments. When teaching HE, it is important to prepare for the topics appropriately to ensure that teachers go into the classroom with a depth of knowledge (Green, 2013) as required by the course outline. As a consequence, the teachers admitted that they had a lot to teach in a limited amount of time so had to effectively teach to the test, therefore, were not giving as rich a learning experience as they would in an ideal world (Green, 2013; Biesta, 2004). The teachers therefore, were effectively incorporating Freire's 'banking system' philosophy (Freire, 1972), and yet paradoxically, many of the accountability measures were focused on student attainment. The students may very well achieve their qualifications (and the teachers their targets), yet as a consequence of the extra demands on the teachers' time to satisfy performativity measures and targets, the students may not have had the opportunity to achieve to their full potential, (Biesta, 2004; Freire, 1985). In other words, the students had enough surface learning about a topic to fulfil the basic assessment requirements for a qualification (Biggs and Tang, 2007), however, they were unable to engage in the deep learning required to understand topics by interacting critically with the teaching

and resources, make connections with previous knowledge and experiences, and consider the arguments before offering any conclusions (Marton et al., 1984; Entwhistle and Ramsden, 1983).

A problem which became apparent during this study, which is also reflected in the literature, was the extent to which performativity measures designed for FE seep into the HE classroom from a policy, curriculum and pedagogic perspective (Harwood and Harwood, 2004; Golding and Griffiths, 2008; Bathmaker and Thomas, 2009; Turner et al., 2009; Lea and Simmons, 2012). However, what this study has recognised, which is rarely considered in the literature, is how the monitoring regime of observations, reduction in classroom time and accountability measures such as 'student achievement' affects the pedagogic approach of teachers and the learning experience of students in the classroom.

All of the teachers involved in the study mainly taught on HE programmes but also had teaching responsibilities for FE classes. They were employed by the college to teach across levels on an FE pay scale (Young, 2002; Harwood and Harwood, 2004; Turner et al., 2009) which contractually obliged them to teach what was required by management. With the exception of Sarah (who was purely a maths teacher on a 0.8 contract), the participating teachers taught 17 hour and a half lessons each week that covered around 9 different subjects each across a range of levels (see Appendix 9), far exceeding the contracted 24 hours 'contact time' (Harwood and Harwood, 2004). As a consequence, any scholarship that could be conducted by the teacher to add or update specialist knowledge for the HE modules they taught was increasingly limited (Feather, 2010). Therefore. the teachers have to prioritise, not necessarily what was important to them (giving the students a learning and teaching experience of high quality and depth), but what was required to satisfy the accountability demands of the management. As a consequence of such demands placed on teachers' time, the learning experience of the students in the classroom was shown to be affected.

During the discovery phase of the AARM, the students had commented on the limited time they had to assimilate and absorb information. This was sometimes due to the length of the lessons, or the speed in which the information was given, the amount of information given or a combination of the three. Ironically, often the appeal

for those choosing to study HE in an FE context rather than at an HEI is the extra 'contact time' that is offered, allowing for more teaching for the subjects (McAndrew, 2010), but this extra time still falls short of an 'ideal'. The pace of the lessons and the volume of information that the students had to absorb in each lesson gave little space for support to be offered in the form of ZPD (Vygotsky, 1978). As a result, the opportunity for the students to achieve a level of knowledge and understanding that reflected their true potential was considerably limited (Freire, 1985). As a result, the issue of 'time' and pace of lessons was the focus for cycle 2 of the AR.

The Interviews with the teachers during the study captured the frustrations they felt as a result of the continual demands of performative measures, and the influence that FE policy had on the HE curriculum and pedagogy (Harwood and Harwood, 2004; Golding and Griffiths, 2008; Bathmaker and Thomas, 2009; Turner et al., 2009; Lea and Simmons, 2012). FE priorities centre on programmes that the sector is measured against both locally and nationally, which are the FE programmes in every institution; HE is not a part of this, therefore this creates consequences for the learning, teaching and assessment of HE programmes delivered in an FE context.

Performativity measures imposed in the FE sector seep into the HE provisions, eating into the time available to teach topics/subjects effectively. As a consequence, the students experience an increase in the pace of the lessons to compensate, as the teacher is obliged to cover the topic material within a restricted timeframe. This can result in the teachers inadvertently teaching to the unit criteria with teaching becoming more a process of information transfer, like that of Freire's (1972) banking system (see section 2.2). There is less time to develop innovative assessments, so they follow a similar format containing written feedback on students' work, which can be time consuming and not necessarily as useful in terms of informative, quality feedback for the students. As a result, teachers become frustrated with their workloads and the quality of provision that they offer to students as the latter are not necessarily provided with opportunities to achieve to their full potential despite the teachers' efforts.

Research Question 3 - *Can different teaching and assessment approaches be applied to create a positive change in the HE in FE environment?*

To address the third research question, the study conducted an exploration into teaching and learning models that were considered effective by the students themselves based on their personal experiences. It was also important to research the literature relating to some of the more common models currently used in FE that could potentially be adapted into the HE classroom. Once the learning and teaching approaches were in place, appropriate methods of assessment needed to be considered.

During initial responses from the 'discovery' and 'dream' phases of the study, the students highlighted peer interaction, demonstration, practical and interactive lectures as effective teaching approaches that helped them learn subjects well. The four approaches seemed to be suited to an experiential approach to learning in which knowledge would be developed as a result of interaction with theory and practical application (Dunlap et al., 2008; Kolb, 1984). Kolb's ELC model (see figure 2.2 in chapter 2) was already used on a range of vocational FE programmes at the college, but was generally applied with training activities that lasted over a period of days or weeks (Clark et al., 2010; Raschick et al., 1998). However, there was little evidence available that it was used to great effect in the HE classroom, but it was a good base from which to build a learning and teaching model. Kolb's model allowed the students to engage with practical tasks (Konak et al., 2014), watch a process or procedure and discuss their experiences with their peers (Rogers, 2002), while guided and supported by the teacher (Mughal and Zafar, 2011).

The ELT model developed as a result of cycle one of the study. The students responded positively to the visual elements that were incorporated into the lessons to demonstrate particular processes and procedures. Opportunities offered for the students to practise new skills and techniques and develop their knowledge and understanding through peer discussion and reflection were very positively received. The students recognised that there was a 'pattern' to the way the topics were introduced and taught, but they did not find the process formulaic or predictable. The support that they received through collaboration with teachers and their peers contributed to the development of their learning and understanding, and the

construction of their knowledge, demonstrating the effectiveness of using Vygotsky's ZPD in the HE classroom (Tummons et al., 2013). However, there was still an issue with the availability of time allocated for lessons which resulted in the pace of teaching being far faster than was ideal to fully absorb the information and process it. Consequently, Cycle 2 of the AR was dedicated to addressing the issue of 'time'.

Following informal discussions with the teachers, there was agreement that it was difficult to allow more time for all the stages of the ELT to take place when teaching the topics. However, they also recognised the importance of each stage and the potential benefits that the students could gain in their learning. What was also agreed was the importance of the need for the topic fundamentals to be fully understood to facilitate knowledge construction. We recognised that it was challenging to find a solution to the issue of time. The Director of Programmes was approached for permission to extend the length of the lessons or add extra teaching days to the programme. We were informed this was not possible because it would increase the running costs and decrease the 'contribution rates' (profitability), therefore after much thought and deliberation, we considered an approach of 'slowing down to speed up'.

It was decided to start the topics using a slow and purposeful pace to allow the students to assimilate the information, digest it and construct a good understanding of the topics' fundamentals. A visual representation was followed by an opportunity for the students to engage in experiential learning (Kolb, 1984). Any issues encountered needed to be discussed with the teacher and peers, with support offered as required (Vygotsky, 1978). The pace of the lesson would then speed up as the topics were developed further. The feedback from the students was positive overall, saying that they preferred the approach because they felt that they had a better understanding of the topics at the start so when the pace of the lessons began to increase, they were usually able to keep up, although many still acknowledged that when the lesson pace did increase, it was still faster than they would have preferred. Therefore, the change to the approach did have a positive effect on many students and went some way in addressing the issue of 'time' and 'lesson pace' which were common negative comments throughout the questionnaires and interviews leading up to that point in the study.

For cycle 3 of the AR we introduced a range of assessment and feedback approaches. The teachers discussed different approaches that could be adopted to assess the students and give feedback, rather than the more traditional written assignment format with written feedback and annotations. We wanted approaches that were not only appropriate for the tasks at hand but would, in addition, benefit the teachers in relation to the demands on their time and workload. The ideas that were suggested and agreed to be trialled in the classroom were closed book examinations, presentations and interviews for assessments, as well as audio/visual approaches to feedback.

The maths teachers decided to use closed book examinations for the higher-grade questions (merit and distinction) but leave the pass questions in assignment form. From the teachers' perspective, such an approach to assessment was less time consuming as the pass questions were relatively quick to assess (the answer was either correct or not), but the benefits were clear with the higher grades, which was more about process and individual approaches so only those who wanted the opportunity to achieve the higher grades sat the exam, reducing the marking load for the teachers. The students who undertook the exams said that it made them focus on the topic and prepare more in advance. They also commented that their results from the closed book exams did reflect what they knew about the topic at that particular point in time. Therefore, as an assessment it was deemed fair.

The teacher trialling the interview technique was very pleased with the method. He gave the students the tasks in assignment form as usual, and then asked them to address all of the tasks, but instead of writing a report, make notes in whatever form they chose. The teacher then interviewed the students about the tasks on a prearranged day, which was recorded. The teacher felt that there were many advantages to this approach. From his perspective, the process was quick, he was able to probe the student for clarification of particular points and was able to give immediate feedback. The students were able to answer the questions verbally, or give visual explanations on the whiteboard. They were positive about the method because they did not have to write out a long report, and they were able to express themselves better verbally and through the use of sketches to 'visualise' their thoughts on the whiteboard.

The audio/visual approach for feedback was trialled for the CAD feedback. It allowed the teacher to create a video in which he went through the students' work and gave an audio commentary over the top. This approach allowed the teacher to use some computer tools during the process (such as highlighting, underlining) to help. The teacher found it a much quicker process than doing written annotations and thought that it was easier to explain certain points whilst reading through the submissions. There was a very positive response from the students who liked the method because they could access it from a range of electronic and mobile devices. They also felt that the detail given in the feedback was far more in depth than they received in written form, and with the visual to support the process, it was much easier to understand.

Other feedback offered to the students was given in an audio file (podcast). The teachers who adopted this method found it very easy to use and found that with some practise, the most effective feedback in this form needed to be unscripted and conversational. All of the teachers commented on how much information can be transmitted in a short period of time. The response from the students was very positive as they thought the feedback given to them was more constructive, offering more information and more clarity than the usual written format.

<u>Research Question 4</u> - *Can a revised pedagogic approach be developed to encourage deeper learning and understanding of topics in the HE (in an FE context) classroom?*

Following analysis of the data for cycle 1 of the AR (based on the data from the baseline), we realised that the revised learning and teaching model needed to include elements that encouraged deeper learning of topics. The research conducted for chapter 2 gave an insight into what we needed to consider in the model's design to avoid learning and teaching approaches that only encouraged superficial surface learning, as well as identifying useful characteristics for deep learning (Tummons et al., 2013) (see table 2.1, chapter 2).

The structure of the ELT model developed and trialled in cycle 1 of the AR allowed the topic fundamentals, which were the primary principles and key concepts, to be built upon and developed. Each stage of the process was a logical progression, thus giving coherence, which is an important characteristic for deep learning (Tummons

et al., 2013). The model is based on the engagement of the students with the teacher and their peers to actively be involved in the learning process, so there is a practical element to it that gives the students an experience of the topic. Such an approach to learning and teaching encourages the students to discuss and construct their own meaning and understanding of a topic (Godor, 2016). Support offered by the teacher based on Vygotsky's ZPD ensures that the students have a constant understanding of their progress (Ramsden, 2003).

The ELT model was as much about the teacher as the student so there were certain responsibilities that the teacher needed to fulfil and/or facilitate to ensure that surface approaches to teaching were avoided in the classroom. This was done based on the deep and surface approaches to teaching (see table 2.2, chapter 2) as outlined by Ramsden (2003). The ELT model created a consistent teaching approach that encouraged the students to critically engage with the topics with a clear understanding of what they needed to learn (Tummons et al., 2013). After completing trials of the ELT model for cycle 1 of the AR, feedback from the students and the teachers was that the sessions were still conducted at a fast pace and as a result, the students were unable to assimilate the information sufficiently and were therefore only able to get a superficial understanding of the topics (Howie and Bagnall, 2013; Biggs and Tang, 2007).

For cycle 2 of the AR I addressed the issue of time in the best way I could whilst working within the constraints of the allowed 'contact hours' for the programme. The process of 'slowing down to speed up' was incorporated to 'generate' more time to assimilate core principles and key concepts (the process is explained in more detail in 5.25). As a result, the students were more positive about their learning experience, generally noticing the extra time that they were afforded to assimilate information, particularly when learning the fundamental principles. There was some time to reflect on their work through discussion with the teacher and peers which was also recognised by the students. However, the time allocation for the lessons was still considered limiting in regard to the learning experience.

We were able to create a pedagogic approach that had the potential to encourage deeper learning and understanding of topics in the HE classroom, in line with the literature (see section 2.4.3). However, when teaching HE in an FE setting, there are

restrictions, such as the limitations of time allowed for the teaching of subjects and performativity measures designed for FE that seep into HE practice (Ball, 2003), and an audit culture that does not align with HE requirements (QAA, 2013).

The data accrued from the study did not offer enough evidence to claim that deeper learning and understanding had been achieved. However, the evidence did suggest that the students had a clearer understanding of the topics than they had before since we introduced the slower, more purposeful delivery of the topic fundamentals. The evidence is further corroborated by the assignment data which showed Year 1 HNC students referral rates down from 9-11% (on the previous two academic years) to 2%, and for Year 2 HNC students, the drop in referral rates over the same period was down from 12-8% to 3% (see tables 4.9 and 4.10). It may be argued that the significant reduction in referral rates may not solely be due to the new approach, and more about the student characteristics (showing resilience and determination to do well). However, the new approach was implemented across all the groups, and it cannot be denied that this has left some impact. Despite this, there was no significant change in the grades that were achieved at Merit and Distinction level which we expected to see to demonstrate a deeper subject knowledge.

Research Question 5 - *What is the impact of a revised approach to pedagogy on student learning when teaching HE (in an FE context)?*

The revised pedagogic approach when teaching HE in an FE context has impacted on student learning in a number of ways. The introduction and small iterations of the ELT model as a template for teaching topics has added a degree of structure, and also acted as a prompt to teachers that actions needed to happen during the lessons. Its initial design was developed from Kolb's ELC principles, sharing an emergent, practical approach to learning with formative assessment built in (Kolb, 1984). By incorporating support into the template in the form of Vygotsky's ZPD (1978), students, through interventions from the teacher or peers, knew the level at which they were learning, and received regular feedback on their progress. It was also important to emphasise the importance of embracing ZPD fully, thus, encouraging the students to openly express their thoughts verbally and discuss any potential issues or areas of a topic that they did not understand with the teacher or their peers (Vygotsky, 1978).

Before the introduction of the ELT model, teaching approaches were, at times, inconsistent in their effectiveness, often due to the time available for the teacher to prepare for lessons properly. Although time consuming initially, once the teachers became familiar with designing lessons using the ELT model, they found the planning to be quite straightforward. Support offered in the classroom, especially in the HE classroom was also limited and inconsistent before the introduction of the model. Encouraging students to reflect on their work and making time available to do so was another way of allowing the students time to think about what they had done and learned.

A major influence on how the new pedagogic approach has impacted on student learning is in the use of time. Interestingly, it was not just the use of the allocated time, but the way it was distributed, and the way lesson pace was varied to slow the learning down. Responses from the students were positive, with the majority stating that the sessions ran considerably better than the previous year (before we trialled the new approach). Student CI said that it was 'still a fast-paced course with a lot to learn [but] it starts slower than last year. We go through the basics of a topic and spend some time getting it right before everything speeds up'. However, we had to acknowledge that although there has been an impact on student learning, the model has the potential to leave a greater effect if more time was allocated to the teaching of each subject.

The study introduced different methods of assessment and feedback which were a departure from the more traditionally used approaches of written assignments and written feedback that are often associated with BTEC, criteria-based programmes. The introduction of interview style assessments, criteria-specific presentations and audio/visual feedback led to positive responses from students and teachers alike in terms of the value of their effectiveness in terms of assessment and feedback approaches. From the students' perspective, they valued the immediate feedback they received on the work and in some cases, such as the interviews and presentations, the opportunity to be able express themselves better to clarify their knowledge and understanding. With regards to benefits for the teachers, due to the interactive nature of the assessments, they were able to probe the students more for clarification in relation to aspects of their answers and feedback during the process. Removing the necessity to give written feedback (unless specifically requested to do

so by individual students), had the positive effect for the teacher of reducing the time required to produce feedback, while ensuring the feedback was individualised and personal. In addition, by giving feedback in electronic form using audio or visual means, the quality and detail offered was much richer. The advantage for the students was that they were able to access their feedback quickly and through numerous electronic mediums.

6.3 Review of the research design and process

Strengths of the research design and process

The research design that I used for this study has enabled me to make an original contribution in the area of teaching HE in an FE context. My study involved over 60 participating students who were actively studying on a HE programme in an FE context (levels 4 and 5). All of the students were in full-time employment within the engineering industry and studied at the college one day a week. They were between 20 and 45 years of age and it would be fair to assume that they are generally from areas and backgrounds of low participation in HE, fitting very much with the characteristics recognised by HEFCE (2006).

The teachers involved with the study worked full-time at the FE institution. They were employed on FE contracts and were able to teach on the HE programmes because they held the required level of qualifications in their subject areas. However, they also had to teach across a range of levels and qualifications on FE programmes, so were typically in the classroom for 25-26 hours each week (Young, 2002; Harwood and Harwood, 2004; Turner et al., 2009). The teaching staff were subject to the monitoring and accountability measures that are part of the professionalisation agenda in FE, so were very much affected by any performativity measures that were implemented (Ball, 2003; Lomas, 2003). Therefore, for the focus of this study, the students and teachers participating in the study were ideal to get a true representation of HE learning and teaching in an FE context.

The use of AI and AR in the development of the AARM (see figure 3.4) worked very well for the study. The data collected during the 'Discovery' and 'Dream' phases of the study was rich and highlighted many areas of focus that I made use of. The key for the 'Discovery' and 'Dream' phases was to ensure that the questions asked were fully aligned to the main research questions, and that consideration was given to who

should be asked the questions and using which platform. For example, the effects of monitoring and accountability measures on teaching was only addressed within a group discussion with the teachers, because I felt that the students would not be able to recognise what these measures were and the possible effects of these for the classroom. However, by asking the students about teaching methods that help them to learn topics well and which may affect their learning in the classroom, their answers also contributed to the question of monitoring and accountability – the most common effect being lack of time to teach topics, resulting in a rather fast-paced delivery.

Townsend's (2010) extended AR model was ideal for the operationalisation of the actions. Although it allows for overlapping of the stages, what I found useful was its relatively rigid format, although Townsend (2010, 2013) refers to the process as more of an ideal rather than a rigid set of sequences. Nonetheless, the first four stages of the model worked particularly well as a lot of preparation, information gathering, and planning took place before the action itself was implemented. Consequently, Townsend's model encouraged me to really question what I hoped to achieve before committing to an action. Having the option to conduct as many cycles as necessary to address the focus of the research was useful. For this study, the structure of the lesson was addressed for cycle 1, the pace of the lesson for cycle 2 and assessment approaches for cycle 3. The 3 cycles followed different lines of inquiry that all contributed to the overall 'Destiny' phase of the AI (see section 4.7).

Limitations of the research design and process

The AI approach is a collaborative and participatory process that relies on dialogue between people to discuss their views, successes, hopes, dreams and aspirations (Whitney and Trosten-Bloom, 2003). AI encourages people to focus on a common phenomenon, engage in a sharing of minds and be energised to collectively agree on a positive direction for the future (Kelm, 2011; Reed, 2007). Group interviews were conducted with the teachers based on two affirmative topics (see Appendix 5). However, from a practical aspect there were two problems with using such an approach. The first was the logistical problem of finding time when all the teachers were available to sit down together. Various adjustments to timetables had to be made and permissions sought for lessons to be covered to enable the meetings to

go ahead. The second problem was keeping the focus of the discussion positive (Whitney and Trosten-Bloom, 2003).

The AI philosophy is about making positive change - to identify what works well in an organisation and how can it be built upon to be even better (Cooperrider and Srivastva, 1987). Therefore, this was the intention for the initial group discussions/interviews with the teachers and the focus of the affirmative questions. However, it became apparent very early in the discussion that the teachers felt that the negatives far outweighed the positives and, in many respects, I believe that the positives were affected by too many negative aspects. I therefore made the decision to allow the teachers the opportunity to engage in a sometimes negative and animated discussion, expressing their views and experiences for the ''Discovery' phase of the AI. Such an approach allowed everyone to take a more positive position for the questions that addressed the 'Dream' phase of the study. Following reflection of this experience, my conclusion was that AI would probably work very well in organisations that function relatively well and where the employees feel that they are valued by their superiors. However, when used in an environment with a workforce with low morale, who feel that they are not valued nor trusted as professionals, such a positive approach is less effective if only trying to encourage positive aspects. Nevertheless, the approach is very effective if the intention is to identify current experiences of people, good or bad, so long as the line of questioning is positive.

Due to many factors, such as limitations on time when the students were able to break away from their studies (considering that they were only studying at the college one day a week), the number of students participating in the study, both mine and the participating teachers' availability due to teaching commitments and the difficulty in being able to align timetables, the majority of the data gathered from the students was done in the form of questionnaires. However, in many cases, follow-up interviews were conducted, although this was generally done with just a sample of the cohorts. Although I believe that the questionnaires contributed a strong and reliable body of data to the study that helped define the final outcome (the 'Destiny'), there was potential for an even richer body of evidence if I had been able to conduct pre-arranged interviews with the students.

When the students were given the questionnaires, the participating teachers explained each question fully to limit any misinterpretation or misunderstanding. All phrases and definitions were also explained before the questionnaires were answered. For example, when the students were asked about teaching methods that they considered to be effective in helping them learn subjects, it was important that they understood what was meant by a lecture, a demonstration, practicals, and such like. However, there was still a risk that some respondents may have misinterpreted the terms. If these questions had been asked on a one-to-one basis such as an interview, I may have been in a position to question the responses, probe further and seek clarification.

It could be argued that the study was limited because it was specifically focused on one curriculum area, conducted with (6) teachers and (62) part-time engineering students on the same level 4 and 5 engineering programme in one particular FE institution in the UK. The profile of the participating students was very similar, as identified in see cycle 2 of the AR (see section 4.5). The HNC/HND qualification that the students work towards is a BTEC, which, is not necessarily what all FE institutions choose. For these reasons, I accept that the research conducted, the data obtained, and the conclusions made are in the context of a specific environment, however there are lessons that can be learnt during this process which I have highlighted earlier.

6.4 Recommendations for further research

As mentioned in the previous section, it is perhaps useful to have the ELT model used in a wider context within the college. I therefore recommend that further research is conducted into the use of the ELT model in other curriculum areas. It would be interesting to monitor if topics that are taught in different disciplines work as well with the model as ours did for this study, and whether students' learning experiences are affected in the same way for our participants. It may be useful to collect and compare the data in order to see if it was possible to make any 'naturalistic generalisations' (Stake, 1978). It may be that there are different or additional effects identified by and from the students, or there may be reason for teachers to adapt the approaches recommended by this study. Certainly, the more

the ELT model is trialled in different areas, the richer the data that will be available, which could result in a refined and contextualised model.

I also believe that it would be worthwhile to broaden the research to some FE programmes. As suggested earlier, many of the issues that have been identified in the study and the literature have their roots in the FE sector itself. Therefore, it may be useful and interesting to conduct a study in which the ELT approach is implemented in a level 3 classroom. Access to HE is an ideal programme from which to start as it is specifically designed as a qualification that gives eligibility to HE for people without traditional qualifications. Therefore, if the model shows evidence of creating a positive change in that environment, it could be rolled out further with other level 3 programmes.

To fully recognise the effectiveness of the ELT approach, it would be interesting to conduct further research using the ELT approach in another FE institution. Are the effects of monitoring and accountability similar to those identified for this study (see chapters 1 and 2)? Are the effects on pedagogic practice the same (see section 4.2)? Does the model have the same positive effect on the learning environment as it did with our study (see section 4.7)? If the data shows similar results to this study, there may be potential for the ELT approach to be adopted across more FE institutions.

This study has identified a very important area of concern, particularly in the FE sector that needs to be investigated further with some urgency – the effects of time in the FE classroom. Throughout this study 'time' was identified as a major negative factor on learning and teaching. The teachers complained of a lack of time available to prepare, plan and teach their lessons to the depth they wanted and to the depth that the students needed, compounded further with performativity issues that places pressure on the sector to meet student achievement targets for funding purposes. There was also the lack of time available in the classroom, and the students complained that the pace of the lessons was too fast due to this. As a result, the students found it very difficult to assimilate the information and achieve a sufficient level of understanding. For these reasons, I believe more research needs to be conducted to identify the negative effects that can occur from a lack of time in which to learn subjects properly. I believe that this study has demonstrated that there is a

very strong case for a review of the FE sector and the appropriateness and effectiveness of a managerialism style of governance. It may be viable to research whether there are any benefits from such performativity measures that can result in a more qualified and confident student body who are prepared for further study in HE as a consequence of studying HE in FE. This may lead to a debate on whether FE is the appropriate context in which to teach at HE level.

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APPENDICES

Appendices cited in this research project:

Appendix 1: Gantt chart showing study timeline.

Appendix 2: Rough draft of student questionnaire for 'Discovery' and 'Dream'.

Appendix 3: Student questionnaire for 'Discovery' and 'Dream' (final version).

Appendix 4: Draft of affirmative topics for teacher group interview for 'Discovery' and 'Dream'.

Appendix 5: Affirmative topics for teacher group interview for 'Discovery' and 'Dream' (final version).

Appendix 6: Student questionnaire for cycle 2, stage 2 of the 'Design' phase.

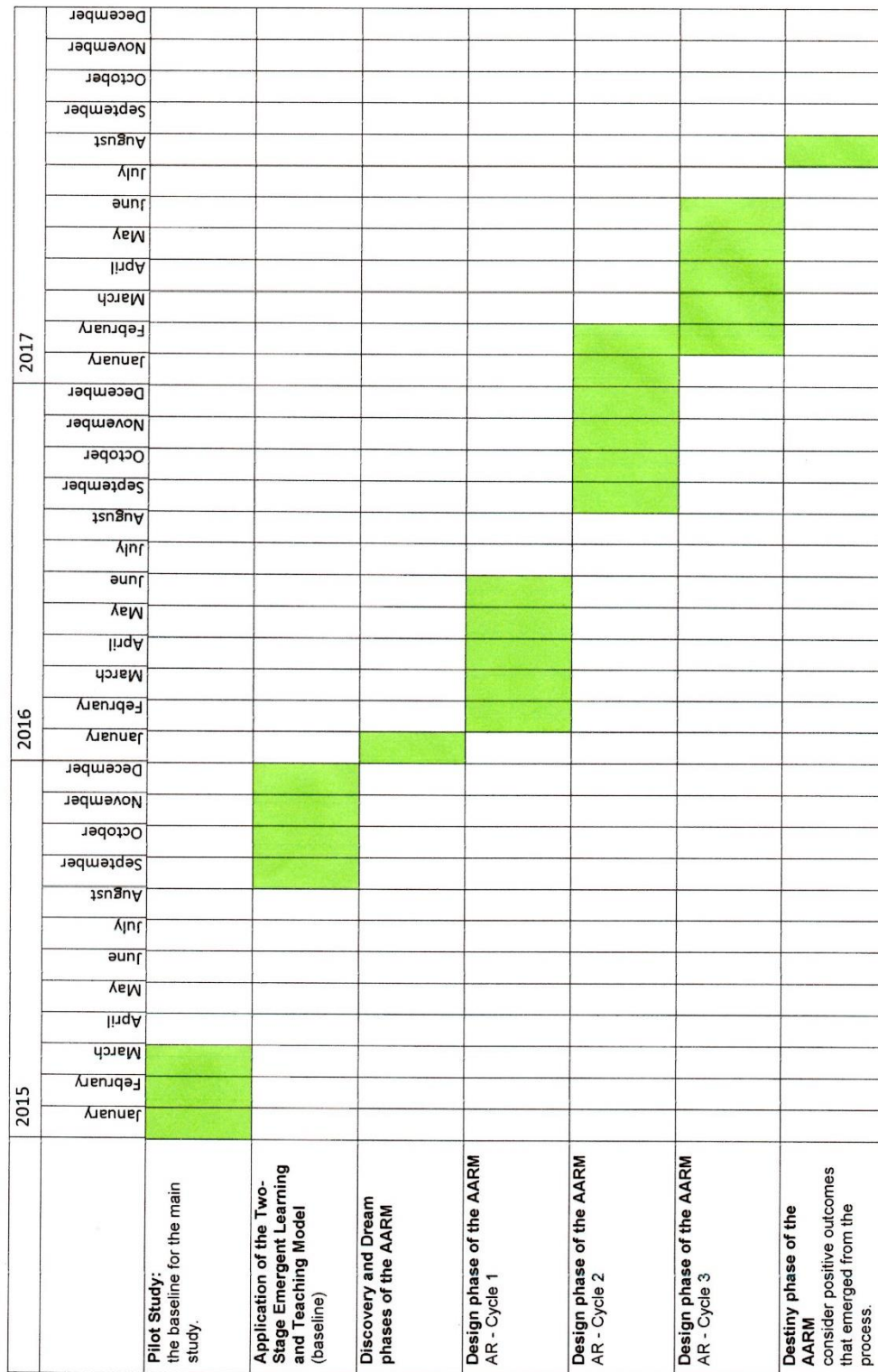Appendix 7: Lesson plan designed for use with the ELT model.

Appendix 8: Lesson plan designed for use with the final ELT model.

Appendix 9: Timetable demonstrating the range of subjects that the participating teachers of HE in FE are required to teach.
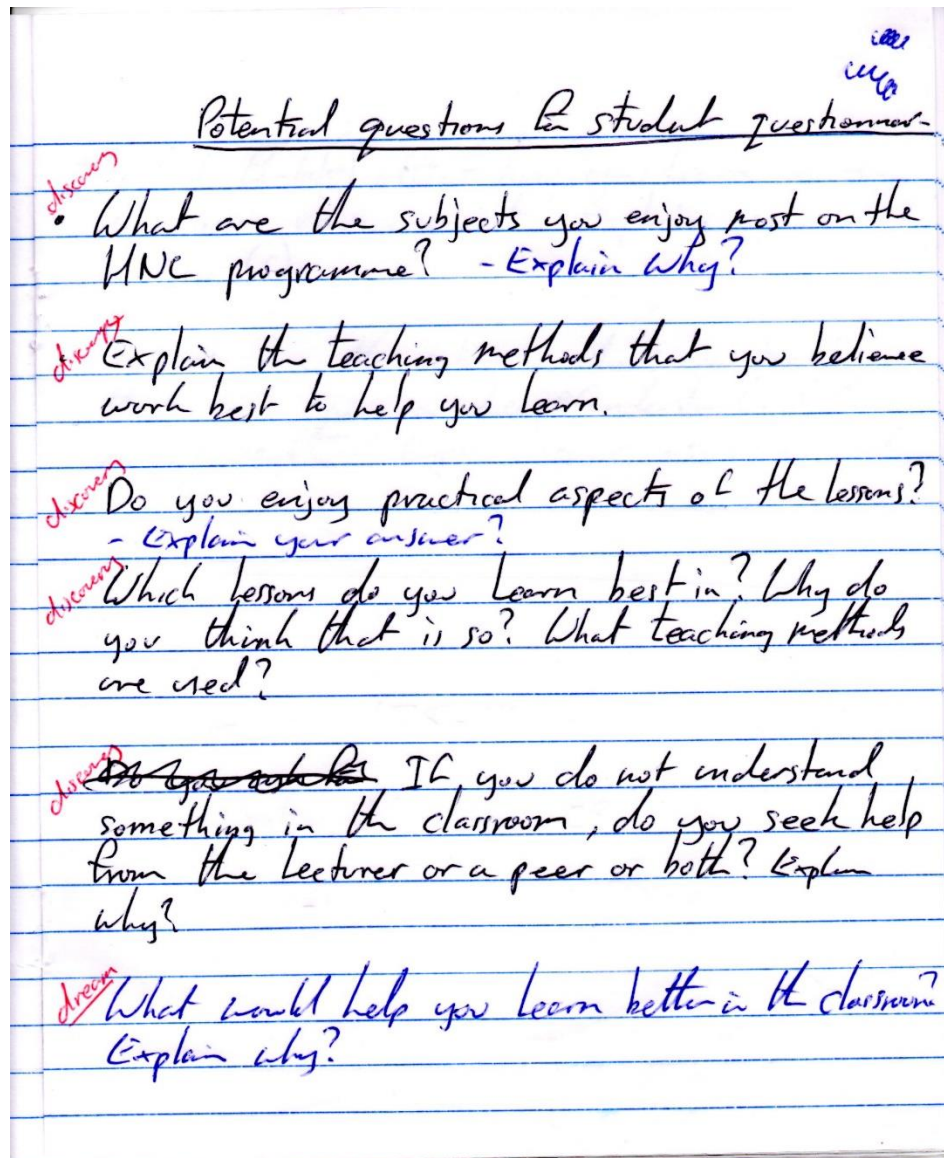
Appendix 1

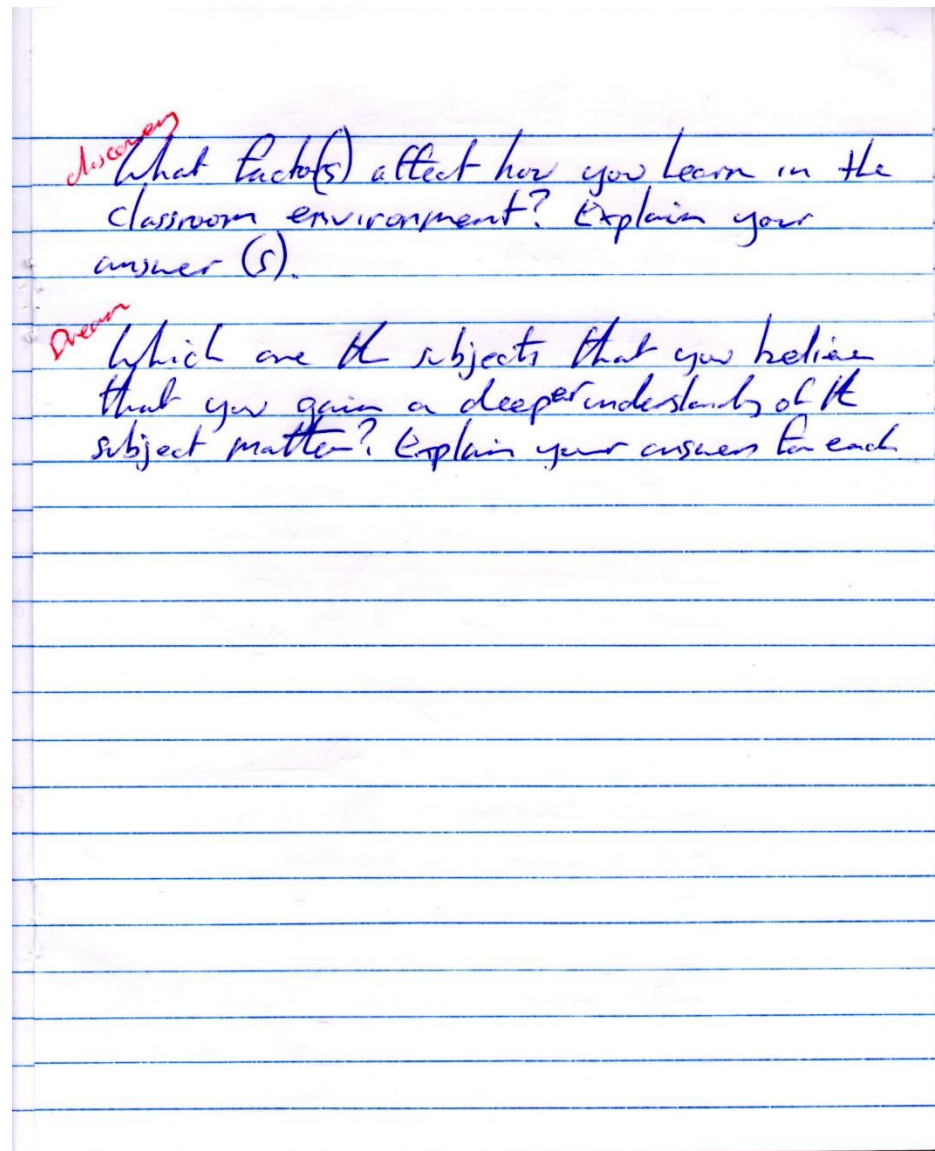(page 1 of 1)

Gantt Chart – Key events of the research

	2015												2016												2017											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pilot Study: the baseline for the main study.	�	▪	▪																																	
Application of the Two-Stage Emergent Learning and Teaching Model (baseline)									▪	▪	▪	▪																								
Discovery and Dream phases of the AARM													▪																							
Design phase of the AARM AR - Cycle 1														▪	▪	▪	▪	▪																		
Design phase of the AARM AR - Cycle 2																					▪	▪	▪	▪	▪	▪										
Design phase of the AARM AR - Cycle 3																												▪	▪	▪						
Destiny phase of the AARM consider positive outcomes that emerged from the process.																																▪				

Appendix 2

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Potential questions for student questionnaire-

- What are the subjects you enjoy most on the HNC programme? - Explain Why?

Explain the teaching methods that you believe work best to help you learn.

Do you enjoy practical aspects of the lessons? - Explain your answer?

Which lessons do you learn best in? Why do you think that is so? What teaching methods are used?

If you do not understand something in the classroom, do you seek help from the lecturer or a peer or both? Explain why?

What would help you learn better in the classroom? Explain why?

Appendix 2

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Appendix 3

(page 1 of 4)

1

What are the effects of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment?

Student questionnaire
(Phase 1)

| Name: | Date: |

Ethics statement

Your contributions to interviews and the diaries that you may be required to keep will be treated and stored confidentially, as required by the Research Ethics Code of Leicester University and the Data Protection Act 2003.

All audio recordings from the interviews and diary entries will be destroyed/deleted after being transcribed, given to you to check for accuracy and anonymised. Any publications from this study will protect participants' anonymity.

You are free to withdraw from the study at any time.

Declaration of authenticity

I declare that the answers to the questions were given by me.

Signed: ………………………………………………

Appendix 3

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Question 1
What teaching methods do you consider to be effective in helping you learn subjects and topics well? Explain your answers.

Appendix 3

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Question 2
What factors can make it difficult for you to gain a deep understanding of a subject or topic? Explain your answers.

Appendix 3

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Appendix 3

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4

> **Question 3**
> Think about a subject(s) or topic(s) from any point during your education where you believe that you gained a deep understanding of the subject matter. What subject(s) was it? Explain why you achieved that deeper learning and understanding.

Appendix 4

(page 1 of 2)

The Discovery/Dream Interview Questions (draft)

Interview questions for affirmative topic 1 - How the effects of monitoring and accountability can be positively addressed in the classroom.

Lead-in

Further education contributes so much to not only the local community but nationwide. It imparts knowledge and skills to a broad range of people who are aspiring to a particular vocation or aiming to reach university. FE is particularly valuable to those people who have missed out on opportunities in compulsory education, be it through social-cultural or learning barriers. Further Education is probably the most inclusive sector in education, giving people an opportunity of a second chance and changes their lives for the better.

Need to stress the importance of FE.

Backward Question

Looking back over your teaching career, can you recall a period when you really enjoyed teaching in the classroom?

When and where was this?

What made it such a good experience? *enjoyable?*

Inward Question

What did you learn from that experience that you still consider or use in the classroom today?

What could we take from that good experience you think we could all benefit from today? *What could be taken ⊕ ①*

Saying it the same thing?

Forward Question

Imagine that it is 2018 and there has been a change of government that had decided to adopt a completely new policy for the FE sector in which all lecturers had been given their professionalism back. All lecturers do now is teach. What has changed?

Clunky / unclear

⊕ ① What could we take from that experience that we could all benefit from today?

Appendix 4

(page 2 of 2)

The Discovery/Dream Interview Questions (draft)

Interview questions for affirmative topic 2 - How pedagogic practice can be changed to encourage higher order thinking skills and deeper subject knowledge.

Lead-in

Ambiguous?

Due to the diverse nature of Further Education and the broad range of students that it serves, the FE lecturer incorporates many different teaching strategies to ensure that the students get the most from their studies. It is this ability to adjust to the students learning needs that make FE such an important gateway for opportunity and experiences that many would have considered being out or their reach.

Background Question   *(1)(2) what teaching approaches have*

Reflecting back at the different subjects and levels that you have taught in the classroom over the years, *(1) (2)* give two or three teaching approaches that you used which seemed to facilitate higher order thinking skills and/or a deeper understanding of a topic. ~~What were these approaches?~~ *repeats?*

What was the level of the students?

How did it facilitate higher order thinking skills and deeper understanding of the topic?

Inward Question

~~After recognising those moments when your teaching proved to be effective in generating higher order thinking skills and deeper understanding,~~ What do you think were the main causes of them being so successful?

So from those experiences, what could we apply in the classroom today that would help achieve the aims of this study? *possibly add more to clarity.*

Forward Question (with an embedded transitional question)

Let us look back from 2018 where the learning experience is now very different. The students gain a much deeper understanding now of the topics and regularly use higher order thinking skills in the classroom. What were the first steps that were taken that contributed to the change?

Appendix 5

(page 1 of 3)

1

What are the effects of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment?

Teacher Interview questions

(Affirmative questions)

Interviewer:	Date:

Ethics statement

Your contributions to interviews and the diaries that you may be required to keep will be treated and stored confidentially, as required by the Research Ethics Code of Leicester University and the Data Protection Act 2003.

All audio recordings from the interviews and diary entries will be destroyed/deleted after being transcribed, given to you to check for accuracy and anonymised. Any publications from this study will protect participants' anonymity.

You are free to withdraw from the study at any time.

Appendix 5

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2

Interview questions for affirmative topic 1 - How the effects of monitoring and accountability can be positively addressed in the classroom.

Lead-in

Further education is such an important sector in the British educational system. The sector was designed to impart knowledge and skills to people aspiring to a particular vocation or aiming to reach university. FE is particularly valuable to those people who have missed out on opportunities in compulsory education. In fact, FE is probably the most inclusive sector in education, giving people an opportunity of a second chance and to change their lives for the better.

Backward Questions

- Looking back over your teaching career, can you recall a period when you really enjoyed teaching in the classroom?
- When and where was this?
- What made it so enjoyable?

Inward Question

- What could we take from that experience that we could all benefit from today?

Forward Question

- Let us look to the future and imagine that it is 2018. There has been a change of government policy for all aspects of the FE sector (including HE) in which all lecturers had been given their professionalism back. In other words, giving the teachers the opportunity to take control of the learning and teaching and make decisions regarding the content and students' progression without working to a fixed accountability policy. All lecturers have to do now is teach. What has changed?

Appendix 5

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<u>**Interview questions for affirmative topic 2 - How pedagogic practice can be changed to encourage higher order thinking skills and deeper subject knowledge.**</u>

<u>Lead-in</u>

With the diverse nature of FE and the range of students that it serves, the lecturer incorporates many different teaching strategies to ensure that the students are offered every advantage to succeed in their studies. It is this ability to adjust to the students' learning needs that makes FE such an important gateway for opportunity and experiences that many would have considered out of reach.

<u>Background Questions</u>

- Reflecting back at the different subjects and levels that you have taught in the classroom over the years, what teaching approaches have you used that seemed to facilitate higher order thinking skills and/or a deeper understanding of a topic?
- What were the levels of the students?
- How did the approach(es) facilitate higher order thinking skills and deeper understanding of the topic?

<u>Inward Questions</u>

- What do you think were the main causes of the teaching approaches being so successful?
- So from those experiences, what could we apply when teaching our HE students that would help achieve the aims of this study and ensure an increased level of success for more students?

<u>Forward Question (with an embedded transitional question)</u>

- Let us look back from 2018 where the learning experience is now very different. The students gain a much deeper understanding now of the topics and regularly use higher order thinking skills in the classroom. What were the first steps that were taken that contributed to the change?

Appendix 6

(page 1 of 4)

1

What are the effects of marketisation on pedagogic practice in the HE in FE classroom, and ways to create a positive change within that environment?

Student questionnaire
(Phase 2)

Name:	Date:

Ethics statement

Your contributions to interviews and the diaries that you may be required to keep will be treated and stored confidentially, as required by the Research Ethics Code of Leicester University and the Data Protection Act 2003.

All audio recordings from the interviews and diary entries will be destroyed/deleted after being transcribed, given to you to check for accuracy and anonymised. Any publications from this study will protect participants' anonymity.

You are free to withdraw from the study at any time.

Declaration of authenticity
I declare that the answers to the questions were given by me.

Signed: …………………………………………

Shane Payne   University of Leicester   Research Study

Appendix 6

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2

Question 1
When <u>not</u> studying at the college (the days in between your college day): Do you reflect on the work that you had done during your college day?

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Question 2
When not studying at the college (the days in between your college day):
Do you do the tasks/homework (not assignments) asked of you by the respective subject tutors?
(Please explain your answer)

Appendix 6

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Question 3
When <u>not</u> studying at the college (the days in between your college day):
When you do the tasks/homework (not assignments) asked of you by the respective subject tutors – Does it help with your understanding of the topic? (Please explain your answer)

Appendix 6

Appendix 7

(page 1 of 3)

SESSION PLAN 2016-17

Course Title:	HNC Diploma in Engineering year 2	Unit/Module:	10 – Properties and Applications of Engineering Materials
Staff Name(s):	▬▬▬	Date/Time:	17/1/2017 1.45 – 3.15pm
Topic:	Failure of materials in service	Week No:	14
Duration:	1h 30mins		

Sessions Aim/s

To Explain the different mechanisms of material failure.
To develop skills to identify failure mechanisms and offer preventative solutions

Learning Outcomes

1: To be able to demonstrate knowledge different mechanisms of failure.
2: To develop the skills necessary to demonstrate ability to identify causes of failure of materials/components in service.
3: To demonstrate ability to suggest preventative solutions to component failures.

Resources

Interactive whiteboard; labelled and non-labelled samples of broken/damaged components.

Learning and Assessment

	Time	Teaching focus	Learning Activities[1]	Check learning by
Fundamentals	**Foundation Building (fundamentals) – Interactive Lecture.** _It is important that this stage allows for student interaction and time to digest the information. Therefore, the pace of the lesson needs to be slow and purposeful._			
	30 mins	Common mechanisms for material failure	Why do materials fail? Engage in discussion with the class to identify what they know, their experiences of material failure, then lead in to the causes. Encourage the class to come up with the 6 most common causes of material failure. Describe the mechanisms.	Discussion. Open questioning.

[1] In writing this section please ensure the information in your Group Profile informs your learning activities. Consider the embedding of equality and diversity and how to make the best use of opportunities to develop your learners' Functional Skills

Appendix 7

(page 2 of 3)

SESSION PLAN 2016-17

Visual Representation – Demonstration/video etc.
Continue with at slow and purposeful pace of delivery.

Demonstration	10 mins	Looking at labelled samples of broken components	Ask students to work in pairs and look at the given samples of components that have failed in service. The samples will be labelled regarding the type of failure they have been subject to. Through discussion, questioning and observation, ensure that the students understand what the tell-tale signs are on the components to corroborate the material failure mechanisms discussed.	Discussion (teacher and peer). Open questioning. Observation.

Experiential learning – Practical Application

(handwritten note: maybe 1 sample to each group and decide whether to use 2nd)

Engagement	10 mins (15 mins)	Looking at a range of unlabelled samples of broken components	The students should continue to work in pairs and study the two samples given to each group. The samples may be physical, photographs or a combination of both. They will then need to examine the components, and based on the evidence present and the tell-tale signs, identify what the mechanism for failure was and why.	Discussion (teacher and peer). Open questioning. Observation.

Knowledge Construction – Further Tasks
The pace of the lesson may now speed up.

Interpretation	25 mins / 30 mins	Identify mechanisms of failure of more components and consider solutions	The students should continue to work in pairs and identify the mechanism for failure on a further three samples and explain why? They must then suggest preventative measures that can be used to extend the life of all five of their components in future, and explain why they think the measures will work.	Discussion (teacher and peer). Open questioning. Observation.

Concept Deliberation – Reflect on experience

Reflection	10 mins	What have we learnt?	Facilitate a group discussion by asking the students to share their views of the lesson and what they learnt and if there are any areas that some are unclear about? What skills have they acquired today? Would the skills be useful in other areas?	Listening to the students reflections and intervening/clarifying points if and when appropriate.

Appendix 7

(page 3 of 3)

PLAN 2016-17

How has equality, diversity and inclusion been included in the session?
All students will be given the same opportunity to achieve the objectives by the end of the session. Help and advice will be given as and when required.

How has your Group Profile informed the session planning?
No specific actions required on the planning based on the group profile.

Evaluation of the effectiveness of the session

Appendix 8

(page 1 of 3)

SESSION PLAN 2017-18

Course Title:	HNC Diploma in Engineering year 1	Unit/Module:	3. Engineering Science (Electrical)
Staff Name(s):		Date/Time:	9/05/17 8.30am to 10.00am
Topic:	Analyse applications of AC, DC and Electromagnetism		
Duration:	1h 30mins	Week No:	9

Sessions Aim/s
To Explain the principles of electromagnetic induction along with Faraday's Law.

Learning Outcomes
1: To demonstrate an understanding of the principles of electromagnetism.
2: To demonstrate an understanding of the principle of operation of Faraday's Law (electro-magnet induction).
3: To be able to compare a range of electro-magnetic applications based on cost, voltage, power and efficiency.

Resources

Interactive white board; Access to video bank; motor rig (room APB1.02)

Learning and Assessment

	Time	Teaching focus	Learning Activities[1]	Check learning by
Fundamentals		**Foundation Building (fundamentals) – Interactive Lecture.** It is important that this stage allows for student interaction and time to digest the information. Therefore, the pace of the lesson needs to be slow and purposeful.		
	30 mins	The principles of electromagnetic induction	Question – what are the four fundamental forces of nature? To be introduced to the principles of electromagnetic induction and the principle of operation of Faraday's Law. Consideration of practical applications of electromagnetic induction.	Discussion. Questioning.

[1] In writing this section please ensure the information in your Group Profile informs your learning activities. Consider the embedding of equality and diversity and how to make the best use of opportunities to develop your learners' Functional Skills

Appendix 8

(page 2 of 3)

SESSION PLAN 2017-18

Demonstration		**Visual Representation – Demonstration/video etc.** Continue with a slow and purposeful pace of delivery.	
	20 mins	The principles of electromagnetic induction in application - Video	Show 'Electromagnetism – the motor principle' video (10 mins) to support theory and demonstrate practical application in power drives (using motor rig). Follow this with questioning and discussion to check for understanding of the principles.	Discussion. Questioning.
Engagement		**Experiential learning – Practical Application** Appropriate support and guidance should be given to all students if required.	
	15 mins	Demonstrate the use of Faraday's Law	Working in pairs, write a description using diagrams, the principle operation of Faraday's Law (electro-magnet induction) (10 mins). Contribute with rest of group to create a list of 5 practical applications (5 mins).	Observation. Questioning.
Interpretation		**Knowledge Construction – Further Tasks** Support and guidance should be proportionately removed by encouraging the students to make connections. The pace of the lesson may now speed up.	
	15 mins	Comparison of practical applications of electromagnetic induction	Compare 3 of the practical applications that were listed, focusing on cost, voltage, power and efficiency. Try to include one novelty application; one power generation application; one application from your work/home (10 mins). Discuss findings (5 mins).	Discussion (teacher and peer). Questioning. Observation.
Reflection		**Concept Deliberation – Reflect on experience** Sufficient time must be given for reflection and discussion.	
	10 mins	What do you understand? What don't you understand?	Facilitate discussion between the students where they are encouraged to reflect on the lesson and express their views on what they believe that they understand in relation to electromagnetism principles and what they do not.	Observation. Questioning.

Appendix 8

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SESSION PLAN 2017-18

Validation		Knowledge Confirmation – Assessment (To be conducted separately from the main lesson) Use a variety of assessment approaches to test for knowledge and understanding of the range of topics throughout the module/unit	
	60 mins 23/05/17	Lab. Analysis of AC/DC circuit theorems, electromagnetic principles and properties.	The students to work in groups of three, and conduct the practical tasks in front of assessors. Task1. Calculate currents and voltages in a given circuit using circuit theorems. Task 2. From a set of given sinusoidal waveforms, describe how complex waves are produced. Task 3. Using AC theory, solve problems on series R, L, C circuits. Task 4. Explain the principles of electromagnetic induction and the applications.	As each task is completed the teachers (assessors) will assess the work using observation and additional questioning if required to check for understanding. Immediate feedback on the criteria achieved will be given during the lab.

How has equality, diversity and inclusion been included in the session?

Support and guidance offered to all students based on the needs of each individual to ensure that they all have the same opportunity to achieve the lesson objectives.

How has your Group Profile informed the session planning?

Some of the pairings are based on the group profile.

Evaluation of the effectiveness of the session

Went really well. The knowledge construction phase would have worked better with more time, so I suggested that a couple of the groups just concentrated on 2 applications rather than 3, to save them rushing too much. The reflection was really good, once again could have gone on longer, so I suggested that we will in future have a reflective forum added onto the VLE to get the most from the experience.

Appendix 9

(page 1 of 1)