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Unearthing Pedagogy: Recitative to reasoned practice.

An exploration of the documented pedagogical understandings and practice of a cohort of PST students in an ITE programme in Ireland

Colm Gerard Dooley (BA, H.Dip Ed, MA in ED.)

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Maynooth University

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NUI Maynooth Faculty of Social Sciences

Education Department

Head of Department: Professor Aislinn O'Donnell

Supervisor: Professor Aislinn O'Donnell

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Abstract

A generation of policy publications focussed on lower secondary education in Ireland are now operational for several years. These policies conceptualise the role of pedagogical understanding and practice for classroom practitioners. This research explores the origins and intent of the pertinent policies with the aim of forming a contextualised conceptualisation of sought pedagogical capacity.

The analysis framework employed has been constructed from Shulman's revised Pedagogical Content Knowledge (PCK) construct (2012) and Loughran's PCK enactment mechanisms. For this study this forms an investigative focus for the policy and portfolio analyses.

Initial Teacher Education (ITE) has often been lauded as the stage in the teacher education continuum which permits the highest level of attitudinal and practice change in teachers. For this reason, this research explores the levels of pedagogical understanding and practice amongst a cohort of PST teachers in a sample Irish ITE programme. This exploration takes the form of a *Qualitative Content Analysis* of the student teacher's reflective portfolios and a semi-structured focus group. Emergent challenges and opportunities to the development of PCK understanding and practice for the PSTs during their ITE phase are also explored and documented.

Throughout this explorative study, efforts have been made to gather evidence and document experience that contribute to the construction of artefacts, concerned with the promotion of pedagogical development in ITE. The results of these efforts are included as appendices at the end of this study.

Glossary of Acronyms

AFL	Assessment for Learning
CBA	Classroom Based Assessment
CEEP	Career Entry Professional Programme
CK	Curricular Knowledge
CoRe	Content Representation
CPD	Continual professional Development
DES	Department of Education and Skills
DeSeCo	Definition and Selection of Key Competencies Framework
ESRI	Economic and Social Research Institute
FE	Further Education
GDPR	General Data Protection Rules
GERM	Global Education Reform Movement
HEA	Higher Education Authority
HEI	Higher Education Institution
HPAT	Health Professions Admissions Test
ICT	Information Communication Technology
INTO	Irish National Teachers Organisation
ITE	Initial Teacher Education
OECD	Organisation for Economic Cooperation and Development
JCT	Junior Cycle for Teachers
LAOS	Looking at Our Schools
NCCA	National Council for Curriculum and Assessment
PaPeRs	Pedagogical and Professional Experiences Repertoire
PCK	Pedagogical Content Knowledge
PDST	Professional Development Service for Teachers
PISA	Programme for International Student Assessment
PME	Professional Masters in Education
PST	Pre-Service Teacher
QCA	Qualitative Content Analysis
SEC	State Examinations Commission
SK	Subject Knowledge
SSE	School Self Evaluation
TALIS	Teaching and learning in Irish Schools
TPCK	Technological Pedagogical Content Knowledge
UDL	Universal Design For Learning

Chapter 1: Unearthing Pedagogy: My personal experience.

As a teacher educator, school leader, policy contributor, teacher, and student for the last two decades, I have employed my experiences to consistently question and reflect on my individual classroom practice. As I progressed in my second order (Murray & Male, 2005) practice educating other teachers, I began querying the habits and routines of the profession generally. I had experienced personal role frustration during my early years of teaching, mainly due to being positioned as a "terminal assessment sage" by others. The school leaders in the school in which I taught, as well as a significant number of students and parents, seemed to focus on that aspect of my practice. As I saw it, they seemed to equate terminal assessment knowledge with 'education' itself, a fallacious concept frequently highlighted by writers in the field of education (Biesta, 2015; Gleeson et al., 2020; Looney, 2006; MacIntyre & Dunne, 2002).

The school community members' professional expectation of me seemed to be that of a curriculum and examination expert, transmitting the resultant knowledge to my students. Consequently, there was an emphasis, by the school communities in which I worked, on encouraging passive learners to listen, record and repeat. But as Sizer said, of this style of education in the 1980s, you cannot 'give' teenagers an education, as too much 'giving' breeds docility (Sizer, 2004). My early experience as a practitioner seemed to corroborate Sizer's beliefs and this realisation kindled in me a desire to explore how my practice could alter these circumstances.

The experience was especially disheartening because I, and not the students, seemed to be working hardest at planning the lessons, orchestrating the lessons, assessing the learning, and giving feedback on it. My practice concerns encouraged me to speak with similarly minded colleagues and to begin reading the research literature in the field of pedagogy, motivation, and cognitive science (Deci & Ryan, 2008; Frymier & Shulman, 1995; Frymier et al., 1996; Illeris, 2009; Ryan & Deci, 2000a). A combination of research and collegial collaboration helped me to devise strategies and methods to

support the learner as pathfinder of their own learning. The process witnessed my own role altering to one of creator, chaperone, facilitator, and orchestrator. Initially this was a very painful change. Parents, students, and school leaders alike all had their say. It mostly followed the line of "why can't you just tell them what they need for the exam?", an attitudinal position reflected in national research (Smyth & Banks, 2012).

Ongoing tentative personal action research encouraged me to hold my ground. I worked, consistently, developing my newfound principles with specific focus on learning supports and resources to assist the learner in taking a more active role in their own learning. I developed confidence to defend my position, as I could produce extensive exemplars of personally developed resources, templates and supports which evidenced the scaffolding of the learning for the students. My experience suggested that when you initially gave the locus of control for the learning to the learner, you need to provide a substantial volume of pre-conceived supports to buttress their early confidence and progress. These scaffolds could be gradually removed as learner confidence grew (Brophy, 2010; Brophy, 2008; Bruner, 1966; Bruner, 2010; Vygotsky, 1962).

Although I had been informally engaging in school based teacher educator practices (mentoring) with PSTs in my school for many years, the late noughties witnessed my initial move to become a part-time university based teacher educator. My path to the role can be described as accidental and ad hoc (White et al, 2021). Similarly to many others who have covered the road before me. My only qualification was my classroom teaching experience, and I had no formal experience of academic research in the field of teacher education (Goodwin & Kosnik, 2013; Murray et al, 2011). This move has been referred to as a 'common journey' (Smith, 2017), into the 'core/traditional' teacher educator group through the 'practitioner pathway' (Murray et al, 2021).

In order to retrospectively frame my identity and professional development experiences initially and progressively through this role change, I have drawn on self-study work in the field of teacher education (Berry & Kitchen, 2021; White, 2019; Berry 2020). Self-Study presents as a suitable frame for this reflection as it provides an

insider, inductive knowledge generating process focussing on the relationship between self and practice (Berry & Kitchen, 2021). There is less global research on those who enter the 'traditional' teacher educator grouping on a part-time basis than those who make a permanent first order to second order transition (White, 2014; Goodwin & Kosnik, 2013; Czerniawski et al, 2018), so aligning with more personalised pieces of research on self through the transitioning process seems appropriate. There has been a long tradition of teacher educators engaging in self-study to make up for the absence of more formalised and unified set of professional development principles for the occupation (Murray et al, 2021).

According to the research of practicing teacher educators engaged in the field of self-study, an experienced teacher moving in to teacher education may experience an identity crisis, either proactively developing a new identity for the new role, or resisting major change and holding on to the identity of a classroom practitioner (White 2014). Looking back, I believe my identity as a classroom teacher formed a 'blueprint' for my practice as a teacher educator (Smith, 2017). The new role excited me. However, like others, I was also apprehensive (Loughran, 2011; Murray & Male, 2005; Swennen & van der Klink, 2008; Zeichner, 2005). You get the title immediately, but it takes a long time before the identity becomes stabilised (Goodwin & Kosnik, 2013). I felt taking responsibility for the crucial early formation of new teachers was an important role with an associated grave responsibility. Like the respondent 'Mona' (Czerniawski et al, 2018), I took on the role because I wanted a new challenge, to augment my own subject discipline teaching and to contribute to the teacher education process in general. I also entered the role with lofty ambitions to foster curriculum makers, a new generation of teachers with the capacity to reinvent the profession from the inside (Goodwin & Kosnik, 2013). These aspirations and ambitions reflected beliefs which in turn heavily influenced the development of my second order practice, and eventually this doctoral research (Czerniawski, 2018).

Aligned with findings from a range of research recently published, my professional learning as a teacher educator was ad hoc, decentralised and ill-defined (Czerniawski et al, 2017; Murray et al, 2021). My professional learning needs were predominantly in

the second order teaching and learning domain as my contract was exclusively teaching focussed. However, as highlighted by Vanassche et al, the interpersonal skills crucial for the role in supervisory conferences with PSTs was a steep learning curve also (Vanassche et al, 2021), as was andragogy in general (Goodwin & Kosnic, 2013). As has been the reported case of others, the absence of a formalised induction initially left me feeling isolated and insecure in the new role (Murray; 2011; Czerniawski et al, 2018). I felt like I was entering an alien world as a bit of a 'bottom feeder'. I struggled with the mundane tasks of navigating complex administrative submissions to secure payment, and battling to navigate traffic and parking between the settings of my two individual professional roles (Murray, 2011). I was extremely lucky with the informal support given to me by my new part-time teacher educator colleagues, a development resource which has been tapped by others before me, in the absence of more formalised structures (Czerniawski et al, 2018).

Considering many of the native pre-service teachers (PSTs) that I encountered had similar educative experiences to the second level system described at the outset of this chapter, it may not surprise that many of them sought quick fixes to complex problems of practice (Goodwin & Kosnik, 2013). Their general priority appeared to be to collect ready-made resources, (*Methods*), that could be deployed in classes the following day. Many of the PSTs were interested in the '*what?'* And not so much in the *how?* and *why?* Generally, they also reported an existence of grave anxiety, where their overwhelming concerns involved basic survival and professional acceptance. I despaired, worrying that I couldn't provide experiences that challenged the hand to mouth situation we found ourselves in. Once again, I was forced to devise strategies and systems to alter the learning locus (Allen et al., 2016). This presented a greater challenge than when I faced a similar predicament in my own classroom practice. I tacitly knew why certain things "worked" in my own context, but did not have the language to justify, or corroborate, the practice, let alone to explain the thinking process to an uninitiated third party (Munby et al., 2001; Smith, 2017).

I engaged with a form of self-study as I grappled week after week to source authentic and realistic synergies between theoretical knowledge and the realities of everyday

practice changing classroom pedagogies into the pedagogy of teacher education (Smith, 2017; Berry, 2020). I stopped referring to my third level work as lectures. I spent weekends preparing what I hoped were thought provoking workshops. I enrolled in a master's degree programme which focussed on learner engagement and teacher education a process of research which definitely augmented both my first and second order practices (White, 2014). Slowly through a process of refinement and review, which in hindsight mirrored other actors in the field's focus on self-study (Berry & Loughran, 2013; Loughran, 2005; Berry & Kitchen, 2021; White, 2019; Berry 2020), my second order practice as a teacher educator gradually developed. When it was successful, the careful planning on my part created resonances for the young PSTs, so that in their successful moments they could create something pedagogically that worked for their students in their context. They also knew how and why they created it, and they could replicate or develop their creation for similar, or slightly different future learning contexts and occasions. The purpose was to encourage them towards being independent and collaborative creators of curriculum resources and pedagogical strategies; to wean them away from total reliance on the consumption of resources created by others. In my experience this had been an important aspect of the evolution of my personal practice, which contributed to the learning being more relatable to the specific student cohort in my local context. The fact that I was a practicing teacher rushing out from my own classroom to attempt to assist them with theirs certainly seemed to earn me 'credibility currency' with the PSTs that I worked with (Murray et al, 2011). They reported to me that they were generally less positive about their experiences with some full-time university-based teacher educators who had never themselves been in a classroom, or whose 'currency' had faded due to the period of time since they had left.

While I was immersed in this professional journey of change, the national system was also grappling with similar concerns at a policy level. High stakes terminal assessments, and their influence on teaching and learning practice in Irish schools, garnered significant policy and research focus during the late nineties and early noughties. They were consistently identified as a crucial factor which obstructed the development of a more learner centred secondary curriculum (Coolahan & National Education

Convention Secretariat., 1994; Looney, 2006; OECD, 1991; Shiel et al., 2009; Smyth et al., 2007) “In post-primary schools, the silence is filled with the deafening noise of two formal public examinations, which, despite the efforts of the NCCA in its *Assessment for Learning Initiative*, drowns out the whispers of other assessment discourse” (Looney, 2006, p. 352).

The curriculum policy makers acknowledged that the experience of the learners was one dominated by *product* learning for the exam (Assessment, 2011) and an appetite existed, at the policy formation level, for a concerted effort to arrest the control of the terminal assessment on the practices and experiences of the lower secondary Irish classroom. These assessment-influenced practices are still highlighted as a major problem in Ireland today. According to a recent *ESRI* (The Economic and Social Research Institute) report, which focussed on the opinions of parents, students and teachers, the current Irish *senior cycle* has a very challenging workload “with teachers and students under pressure to ‘cover the course’, resulting in a focus on rote learning to prepare for the examination, and the neglect of higher order thinking and broader skill development” (Banks et al., 2018, p. 59).

As a consequence of my personal curricular and pedagogical focus in first and second order practice, I was enthused when I first heard about the systemic plans for Junior Cycle reform in 2012. I saw it as a potential chink of curricular light for the future. The initial draft policy publications also suggested that the enduring personal feeling of pedagogically ‘striding against the tide’ might dissipate for me professionally. The draft *Framework* described a constructivist learning theory influenced teaching and learning structure which refocussed the purpose of the system away from a concentration on teacher centric didactic instruction and student rote learning of prescribed content (NCCA, 2011a). At the time I wondered how the teacher education support systems would be deployed to assist the new framework? Well experienced scholars of the field lament that despite 40 years of previous efforts (Coolahan et al., 2017, p. 41) to implement significant practice change through curricular policy, the learners’ experience at lower secondary in Ireland has “remained largely the same” (Gleeson & Donnabháin, 2009; NCCA, 2011b, p. 3). They highlighted how it has long been

acknowledged that the practice "status quo" resists change in Ireland and abroad (NCCA, 2011b). I was intrigued how the implementation process was going to disrupt this reality of practice inertia?

The purported intent and principle of the new curricular framework was to refocus on the *how?* of learning and teaching, and the repositioning of the learner at the centre of the process (NCCA, 2010, 2011b). The designers felt the only way to achieve this was changing the *how?* of assessment, integrating it into the process of learning. Their hopes were to change assessment from a mechanism to establish what you know, to a mechanism which enables the learner to demonstrate learning capacity and for the educator to formatively diagnose outstanding issues and communicate and orchestrate next steps for the learner's learning progression. They mandated for 40% of internal school assessment to be carried out by teachers as part of the Junior Cycle process (NCCA, 2011b).

When the assessment realities were set forth, my initial enthusiasm for the focus on the learning wasn't matched by all Irish educational partners. The opposition of leading teacher trade unions to the proposed curricular and assessment changes gained control of the agenda. In their opinion, the expected professional practice change was a step too far (MacPhail et al., 2018). This was despite the Unions holding seven of the twenty five places on the *National Council for Curriculum and Assessment* (NCCA) throughout the period of curriculum development (Printer, 2020). It was suggested that an opportunity to introspectively examine the effectiveness of practice was missed when "debate and discussion were dominated by modes of student assessment rather than pedagogical beliefs and values" (Gleeson et al., 2020, p. 490). There were also significant concerns as to the motives of those devising and sanctioning the new curriculum (Clarke & Killeavy, 2012; Gleeson, 2010; Printer, 2020; Sugrue & Solbrekke, 2011), particularly in relation to an over-zealous focus on satisfying industrial and economic concerns.

In response to these significant challenges to the proposed curriculum changes, policy makers and politicians moved their position in respect of assessment. Specifically, they

reduced the percentage awarded for classroom-based assessments (CBA's) from 40% to 10%. The idea that teachers would mark their own terminal assessments was also scrapped (Coolahan et al., 2017). However, the overarching constructivist learning principles of the curricular change remained. The corollary practices of the recommended style of teaching and learning that survived into the final publication of *A Framework for Junior Cycle 2015* were mostly unchanged from the earlier 2012 draft. In comparison with more conservative content transmission practices in education, the desired changes in the role of the teacher and the learner were profound. However, without the impetus of significant assessment reform, what of this new framework suggested that it would be successfully cultivated in soil that had rejected similar policy inputs over a period of 40 years? This implementation concern has proven to be a valid query as, since the commencement of this study, it was echoed by the NCCA in their own review of the introduction of the new English specification (Assessment, 2018).

Indeed, by the time that the new *Framework for Junior Cycle (2015)* was published, I was involved in the process of subject specification development with the NCCA. During the process of interpreting the *Framework* for the development of a subject specification, I raised concerns that there seemed to be a significant absence of teacher education and professional support service agencies involved. This absence, in my opinion, contributed to the mechanisms by which these pedagogical/learning practice changes might be implemented, enacted, and achieved receiving little focus during the specification creation process. This concerned me. Having already personally experienced elements of my own practice shift as both a first order and a second order practitioner, I was acutely aware of the potential complexity of this process.

The abovementioned pedagogical experiences and concerns, in the context of the publication of a new generation of frameworks and policies focussed on teachers' practice at lower secondary level in Ireland, kindled in me a profound interest in the pedagogical development of teachers. For the purposes of this study, I channelled that interest into the first phase of the teacher education continuum. My central focus

being to explore the pedagogical understandings and practices planned for and reflected upon by pre-service teachers during their initial grappling with developing their role as teacher.

Chapter 2: Research Design

Rationale

The lower secondary curriculum in Ireland has recently changed. This present study posits that the new curriculum, and supporting policies, have a greater focus on practitioner pedagogical knowledge than what preceded them. Consequently, this study seeks to attain an explicit understanding of the pedagogical role of teachers as looked for by the latest suite of published policies targeting lower-secondary education in Ireland. The looked-for pedagogical capacities will be synthesized through an analysis of recent *Teaching Council*, NCCA and *Department of Education (DES)* publications. The study further seeks to explore the extent to which these role changes are facilitated within the *teacher education continuum*. It specifically focusses on the associated understanding and application of the pedagogical principles of these recent policies by PSTs in *Initial Teacher Education* (ITE) with the purpose of understanding the extent, and range, of their pedagogical development. Consequently, the aim of this study is to gain a greater understanding of the processes, and experiences of pedagogical development encountered by this cohort in the context of significant policy and curriculum change.

In the context of Ireland's curricular design shift, this study proposes to concentrate on one specific teaching knowledge area: pedagogical knowledge. As Shulman says: "to conduct a piece of research scholars must necessarily narrow their scope, focus their review…there are no exceptions" (Shulman, 1986, p. 6). Benjamin Bloom, reflecting on a lifetime dedicated to augmenting the theoretical and clinical practice of teachers, commented that, "after forty years of intensive research on school learning in the United States as well as abroad, my major conclusion is: What any person in the world can learn, almost all persons can learn if provided with appropriate prior and current conditions of learning", (Bloom, 1985, p. 4). If we believe this informed assertion on the primacy of the orchestration of 'conditions', where must pedagogical knowledge and practice rest in any list of educational priorities? This study contends that pedagogical development certainly should be central to teacher preparation efforts.

To argue for this is not to elevate this type of knowledge above other kinds of teacher knowledge, such as teacher knowledge of content, curriculum, educational contexts and learners and their characteristics (Shulman, 1987). Rather, it is to suggest that pedagogical knowledge is a lynchpin component of teachers' professional practice. It is also crucial knowledge in a context where there is an attempt to reorient the curriculum as one of autonomous teachers devising and designing learning resources and experiences. Brown opined that the difference between teacher centred and learner centred practice is that in the former "teachers tend to follow the waves rather than charter courses" and that to implement a change from one to the other requires a paradigmatic role shift (Brown, 2003, p. 54). This study sets out with the aim to understand how this recent Irish curricular change has ramifications for the pedagogical role of the classroom practitioner and those orchestrating their development.

Focussing on a Phase of the Continuum

There was a choice as to whether to base this pedagogical exploration in an in-career setting or in a pre-service one. PSTs are externally evaluated in the same way as in-career practitioners, according to the quality framework *Looking at Our Schools 2016-2020* (D. o. E. Inspectorate, 2016). The types of pedagogical capacity expected in ITE is defined by the same principles as those for in-career practitioners. However, PSTs have a considerably reduced class-contact time (20%), in comparison to their in-career colleagues, potentially providing them with more time to research, plan, prepare and enact pedagogical thinking and practice. This is why ITE is considered a significant and influential phase of teacher practice where initiates have not formed a praxis habitus which might obstruct adoption of new principles or concepts (Darling-Hammond, 2017; Feiman-Nemser, 2001), and suggests that a focus on the *Initial* phase of the continuum provides an appropriate setting to explore pedagogical development. This study focusses on the pedagogical understandings and practice planning and reflection of participants in one individual ITE program at different moments across their two years participation on that program.

Exploring the Complexity of Pedagogy

If there is a pedagogical practice shift prescribed by new educational policies and it is found to be significant in nature, how then are these practitioner capacities currently fostered within Ireland's teacher education continuum? Ireland's curriculum of 'content explicit' syllabi have been replaced by, what some have called, 'lean' frameworks and specifications (Hyland, 2019). This concern over the lack of prescription of curricular content is countered by documented experience in other jurisdictions where over specification in outcomes curricula has been clearly linked to enabling high stakes accountability and performativity for both learners and teachers alike (Leat et al., 2013).

Leaner outcomes-based curricula put pressure on individual teachers, departments and schools to tap into their practical and theoretical pedagogical knowledge in order to inform effective instructional design and to meet the policies' prescribed learner outcomes and teaching practices (Gleeson et al., 2020). A recent NCCA review highlighted a concern in this precise area from in-career teachers of Junior Cycle English who noted "making choices about pedagogy in light of the learning outcomes is challenging. There is a need for professional support and for discussion about this during CPD" (NCCA, 2018, p. 28). As a contribution to the research in this field, this study seeks to establish the pedagogical understandings and capacities sought from lower-secondary teachers and to understand the extent to which the established traditional pedagogical role of these teachers has been changed by these new policies?

Educational researchers frame pedagogical craft as an immensely complex practice (Darling-Hammond, 2012; Feiman-Nemser, 2001; Loughran, Korthagen, et al., 2008). Every teacher enters pre-service programmes with previous exposure to an 'apprenticeship of observation', having lived through their own formative classroom experiences (Lortie, 1975). They rarely appreciate the complexity of the knowledge

base which supports 'effective/good' teaching (Cess-Newsome, 1999; Conway et al., 2009; Hume & Berry, 2011; Loughran, Korthagen, et al., 2008; Loughran, Mulhall, et al., 2008). As learners, they rarely had access to their own teacher's decision making processes and thoughts as they were being taught (Munby et al., 2001). As such there is significant pressure on the continuum of teacher education, which finds itself at the confluence between past experience, values and beliefs and the professional formation goals aligned with both principles of the Higher Education Institution (HEI) and the profession's regulator. ITE is positioned to devise and facilitate opportunities of exploration and realisation to new entrants in order to promote the enactment of such pedagogical practices and understandings. This study looks to explore this responsibility of developing pedagogical knowledge in ITE through the eyes and experiences of its participants.

In order to explore pedagogical development, understanding and practice, this study draws on the model of teacher pedagogical knowledge created by Lee Shulman. What is significant about Shulman's work is that, in addition to Curricular Knowledge (CK) and Subject Knowledge (SK), he coined the domain of *Pedagogical Content Knowledge* (PCK) (Shulman, 1987; Shulman, 1986). Shulman's PCK construct, although refined, has existed and grown for thirty-five years and is acknowledged as a construct which has the potential to explicate the *tacit* nature of pedagogical practice (Ballet et al., 2006; Bertram & Loughran, 2012; Carlson et al., 2015; Gess-Newsome et al., 2019; Korthagen et al., 2006; Loughran et al., 2012; Loughran, Korthagen, et al., 2008). I argue that the constructivist influence, the learner centred nature, and the outcomes focus of Shulman's framework make it an ideal construct to employ for the stated purposes of this study, considering, as we will see in the following chapters, that these principles also informed the design of the curricular framework at junior cycle in Ireland.

Potential Lacuna in the Field

Despite the well-documented complexity in the enactment of pedagogy, pedagogical practice within teacher education does not appear to be a research priority either internationally (Grossman, 2008; Grossman & McDonald, 2008; Korthagen, 2017a) or

in the Irish context (Devine et al., 2013). More specifically, PCK is still a relatively new concept in the field of Irish educational development. An extensive piece of research by the ESRI, which focussed on teaching practice at post-primary level, did not include "pedagogy" or related terms (Smyth, 1999). Instead, other school factors such as subject choice, disciplinary climate, academic climate (aspirations and work ethic of students and teachers alike) were focussed on. This is only twenty years ago and in the work of one of Ireland's vanguard educational research organisations.

There are small amounts of research and publication in the area within Irish HEI Education Schools and Departments, but they are in the minority when compared with other academic areas of output and publication (MacPhail, 2017; MacPhail et al., 2013; Shuilleabhain, 2016; Sweeney et al., 2020). The recent report on the *Structure of ITE in Ireland* acknowledged this research problem and recommended that Irish teacher education research needed to focus more on first and second order practice, specifically on the fundamentals of teaching and learning (Sahlberg, 2012). This is a call that is echoed internationally by Grossman et al, "research in teacher education needs to return to sustained inquiry about the clinical aspects of practice and how best to develop skilled practice-to add pedagogies of enactment to our existing repertoire of pedagogies of investigation" (Grossman & McDonald, 2008, p. 189).

In Ireland, whilst there is an aim to provide ITE which seeks to produce pedagogically adaptive and fluid practitioners through a highly intellectual and deeply clinical process (Sahlberg, 2012), the current system has a pedagogical focus which is emergent at best (Devine et al., 2013). This study investigates to what extent challenges in relation to implementation have been acknowledged, deconstructed or supported? If a significant practice shift is sought, we are warned that such a role change should not be underestimated (Coolahan et al., 2017). It is hoped that this research will also afford opportunities to teacher educators to reflect on how ITE might continue to respond to these considerable clinical challenges? These responses are not suggested to be simplistic replications of 'effective practices' in a process-product model of teacher preparation (Conway et al., 2009). This is about facilitating

an increase in pedagogical awareness, adeptness, and proficiency through expanding the scope and adaptability of the pedagogical tools at the PST's disposal.

This study is also limited in its scope. It includes a sample of one cohort of PSTs in one teacher education program in one Irish HEI across their consecutive programme. However, the study hopes to reveal contextual realities, and indications, that might be useful in a national context and beyond. A central concern of an exploratory piece of research, such as this one, was to employ rigorous analytical procedures to ensure high levels of validity and reliability. A detailed account of the methodological approach is herein presented. This may contribute to the replicability of the study at scale and to the confidence of the academic community in the processes administered. It is important to note that this researcher was not working on this programme and has never worked with this cohort of PSTs.

Research Questions:

1. How do current key Irish policy documents concerned with lower secondary teaching and learning in Ireland conceptualise pedagogical understanding and practice?
2. To what extent are the pedagogical development experiences of the sampled PSTs aligned with the pedagogical intent established by this study's policy analysis?
3. What are the challenges/opportunities in developing pedagogical understanding and practice, in particular PCK, for PSTs during their ITE experience?
4. In the context of this wider reframing of educational policy what can a QCA of reflective portfolios help us to learn about the levels of pedagogical understanding and practice documented by PSTs enrolled in an ITE programme?

5. What artefact(s) could enable initial teacher educators to support the ongoing development of pedagogical understanding and practice within ITE? (*Answered in Apendices*)

Summary

This chapter addresses context, rationale for and research design of this study. It begins with a recent curricular change that looks for a redefined pedagogical capacity from classroom practitioners. Pedagogical craft, and its development, are said to be

immensely complex processes. Consequently, this study focusses on the *Initial* phase of the teacher education continuum to observe how this complexity is tackled during its formative beginnings in ITE.

This study contributes to the field as it focusses on pedagogical development in ITE, an area that has not been a central concern in teacher education research in Ireland. It employs innovative qualitative methods to access the experience of the PSTs. It also seeks to reveal the intent and implementation mechanisms employed by the agencies that were central to this curriculum and teacher role change, through which they planned to support the associated pedagogical understanding and enactment development of new entrants to the teaching profession.

Chapter 3: Setting the Research Context:

Introduction

A new generation of public documents concerned with curriculum and teacher practice have now been in operation for a number of years in Ireland (Council, 2016a, 2016b; D. o. E. Inspectorate, 2016). This study suggests that these public documents have learner centred, constructivist orientations which call attention to the need to develop pedagogical dispositions and enactments of classroom practitioners. Personal experience, outlined in Chapter 1, and national and international research suggest that making a systemic change from predominantly content transmission practice to predominantly learner centred classrooms can involve an extraordinarily complex systemic transformation, (Brown, 2003; Gleeson et al., 2020). Domestic and international experience suggests that any policy which seeks significant educational

change, such as reformed pedagogical practice, faces distinct challenges both in the cognitive and affective domains of those practitioners upon which the policy seeks to have a role change affect (Buachalla, 1988; Hogan et al., 2007; Spillane et al., 2002; Woodbury & Gess-Newsome, 2002).

Regardless of the purpose of educational policy reform, classroom practitioners are crucial to achieving reform's authentic implementation (Fullan, 2007a). Indeed, unless practicing teachers have considerable pedagogical enactment opportunities during their professional development continuum, it is unlikely that they will be in the position to authentically implement radical and profound practice changes if they are sought by policy makers. These types of changes would be congruent with Cuban's coined *2nd Order change* (Cuban, 1988). Other researchers have strongly urged that extensive supports should be in place before an educational reform is heralded if authenticity in implementation is to be achieved (Cohen, 1993; Halász & Michel, 2011; Sahlberg, 2006). These macro contextual issues will continuously be explored alongside the main focus of this study which centres on PSTs as they grapple with their personal pedagogical understanding and enactment, mapping the achievements, the omissions and the challenges of this pedagogically transformative process. This literature review outlines the following themes and relevant literature upon which I have constructed the foundations of this exploration. I argue that these review foci will illuminate and contextualise the findings of the study.

Lower Secondary Curricular Framework: The scope of this research does not permit an in-depth curricular study focus. However, the study does not accept the curriculum deployed at lower secondary level in Ireland uncritically. This section outlines curricular contentions and suggests how, contextually, Ireland's policy borrowing, and translation, can be interpreted as a more balanced approach, in comparison to processes employed in other jurisdictions. This section provides specific context for the subsequent sections.

Pedagogical Content Knowledge: The chapter then moves to an exploration of the PCK concept within the field of instructional strategies and design. A critical analysis of the

construct's origins, developments and contentions follows. This section also examines how PCK is an appropriate investigative focus or lens to parse and unveil pedagogical reasoning and action for the purposes of this study.

The Importance of Values and Beliefs: The chapter continues with a section which investigates the discourse on values and beliefs, specifically focussing on the influence of this domain on teacher education and professional formation.

Initial Teacher Education: The subsequent section on ITE explores key elements of the research, describing how university-based teacher preparation programs can be structured, with specific focus on the Irish context. Whilst this study is not evaluative in nature, its exploratory design seeks to attain a deeper understanding of the pedagogical development process through the experiences of candidates on a specific PME programme. Consequently, the study aims to understand challenges faced generally by ITE programmes at the confluence of the complex interplay between theoretical and practical knowledge, school and university sites and formation/preparation challenges with PSTs.

Ireland's Pedagogical Heritage: The penultimate section reviews the pedagogical disposition of the Irish teaching profession in general, as observed by both national and international commentators, across the last five decades. This is done to introduce the general disposition of in-career teachers who are likely to meet/mentor PME candidates during the 50% of their ITE course that they spend in school sites.

Reflective Portfolios: The final section of this review introduces the topic of portfolios. It specifically looks at their purpose and rationale, highlighting the difference between developmental and performative variants, and presents limitations and criticisms which are clearly voiced in the field's discourse. This will be returned to in both the methodology and discussion chapters.

Ireland's Curriculum at Lower Secondary:

This study is focussed on the pedagogical understanding and practice documented by PSTs engaged in ITE, in the context of a new generation of pedagogically concerned policies published in this area. The curriculum which they are preparing to facilitate, that is currently deployed at lower-secondary level in Ireland, could be described as outcomes based, learner centred and constructivist in design (Assessment, 2015; NCCA, 2011a). Policy makers have made it quite clear that "curriculum policy in Ireland, [*currently*], shifts away from prescriptive specification of content towards a more generic, skill-based approach articulated as *Learning Outcomes*" (NCCA, 2019, p. 5). This style of curriculum shifts the locus of planning control, from a central authority, to the teachers in the schools, necessitating them to engage creatively in designing resources and learning experiences (Byrne & Prendergast, 2020; Priestley et al., 2012). It also prioritises making the learner central to the educational process (Education, 2015; D. o. E. Inspectorate, 2016).

This style of curriculum was only widely adopted by member states of the European Union following an agreement in the European Parliament in the December of 2006, (Council, 2006; OECD, 2005). The latter half of the previous century had been dominated by a more behaviourist and rational approach to curriculum, with a classical humanist focus (Gleeson, 2010; Mulcahy, 1989; Tyler, 2004). This was invariably 'time spent' and 'terminal assessment' focussed, and although reviewed and renewed, retained a focus on the transmission of content knowledge; "a set of documents for implementation" (Sahlberg, 2005, p. 5). The current Irish lower secondary curriculum challenged the dominance of a classical, behavioural transmission construct. It claimed to seek to empower the local institution and practitioner to autonomously diagnose the needs of the learners, creating authentic learning opportunities which strive to foster sustainable growth for each individual (Education, 2015; NCCA, 2009; Ryan, 2008; Skills, 2012).

Ireland's lower secondary Junior Cycle framework was heavily influenced by the OECD *Definition and Selection of Key Competencies Framework* (DeSeCo) (NCCA, 2011a;

OECD, 2005). The international influence of learning outcome frameworks on national educational policies is not new. Learning outcome/competence frameworks have been influential in education since the 1980s. Opponents of the framework argue that its rise has mirrored that of *neoliberal economics*, the *human capital paradigm* and the *knowledge society* (Priestley et al., 2012). Supporters of the paradigm would suggest that outcomes frameworks have emerged from an economic concern that the "routine, rule-based, knowledge, which is easiest to teach and to test, is also easiest to digitize, automate and outsource" (Schleicher, 2012). They argue that available unskilled work is reducing, while the demand for adaptive problem solvers for challenges as yet unforeseen is rising (Oesch, 2010). Consequently, they claim lifelong learning to pre-empt the obsolescence of knowledge and skill, being digitally knowledgeable and being aware and critical of change, and its consequences, are the capacities considered to be universally worth promoting, and which have been the concerns of educational curricula for centuries (Delors, 1998; Halász & Michel, 2011).

Learner centred curricula employ outcomes and key skills as mechanisms with which to construct the purposes, means and principles of their framework. Advocates of competences/outcomes-based curricula in education promote these metrics as a high trust mechanism, one which seeks to explicate the tacit and the complex into accessible practices (Andreas, 2011; Council, 2006; Hislop, 2013). These proponents have a further hope that by making the principles and fundamentals of society's and industry's complex processes explicit, that future generations will be better able to innovate beyond the achievements of the current generation; perhaps even solving the global problems created by them (Harari, 2016).

Critics argue that outcome frameworks herald the marketization of education and the prioritisation of the economic productivity of citizens over a focus on human development (Biesta, 2015; Deng, 2018b; Harford & O'Doherty, 2016; Sugrue, 2006). The outcomes curriculum design and process has also been critically referred to as contributing to the 'learnification' of education. Some commentators believe that this learnification relegates subject knowledge and the intentional nature of teachers' practice, in favour of developing skills in somewhat of a vacuum (Biesta, 2015; Deng,

2015; Gleeson et al., 2020). According to these outcomes critics, current education systems are influenced by, and focus too strongly on, economic and market preparation of citizens. They highlight concerns about the relegation of the emotional, the moral and the place of the arts in current Global Education Reform Movement (GERM) systems (Sahlberg, 2016). They further warn that competences, often adopted in tandem with outcomes focussed curricula, are a low trust mechanism; a mechanism which has been designed by policy makers and politicians in order to accommodate accountability procedures and the erosion of the teaching 'profession' (Biesta, 2015; Conway & Murphy, 2013; Sahlberg, 2012).

This study acknowledges the tensions generated by these discourses and, like Shulman, rejects the instrumentalist, reductive and simplistic deformative distortion of outcomes curricular frameworks (Shulman, 1987; Shulman, 1986). It instead promotes the stance that outcomes models of curriculum have the potential to provide a 'meeting point' which respects the importance of cognitive science, and the various knowledge domains commanded by successful teaching practitioners. To protect this meeting point, proponents will collectively need to defend against both those of a managerial disposition who crave simplistic accountability measures, and the consumerist practitioner looking for the latest tips and tricks devoid of pedagogical underpinnings.

This 'meeting point' can be said to have been somewhat achieved in the Irish context for a number of reasons. Ireland's Junior Cycle learner outcomes are broad aims for learner developments by the end of a stage of education, as opposed to short term detailed grids and rubrics which tend to morph into assessment standards, reducing the complexity of teachers' work and students' learning (Priestley, 2016). Subject disciplines have been retained within the new curriculum, as opposed to, for example, introducing thematic models (Education, 2015). This comparatively balanced orientation has the potential to retain, and even bolster, the general professional status and autonomy for teaching practitioners in Ireland. This style of curricular design is strongly aligned with the formative PCK work of Shulman (Shulman, 1987;

Shulman, 1986) who strongly rejected the use of outcomes frameworks for narrow simplistic standardised accountability and evaluation of teachers.

It is therefore important to understand how the new curricular framework, and associated policies, detail and describe the recommended theoretical understandings and practices looked for from the teaching practitioners in Irish post-primary schools. We will examine in the next chapter the details and descriptions included in policy relating to teachers' pedagogical knowledge.

This particular knowledge domain – pedagogical knowledge - has been chosen as this study opines that it is the domain of teacher knowledge which is least in demand when teaching practitioners operate within behavioural oriented curricula. These curricula are generally accompanied by rigidly prescribed syllabus document and content which teachers are expected to transmit to students (Sahlberg, 2006). In this next section, I will explain in more detail the rationale for focussing on pedagogical knowledge.

Why PCK as a Pedagogical Investigative Focus?

In the field of instructional design, there are currently a number of frameworks that can be employed by teacher educators and teaching practitioners who wish to engage with a professional improvement process. These instructional frameworks tend to focus on unveiling the rationale, purpose and actions for classroom practice which increases the focus on learning. One such operational instructional design frame is *Universal Design for Learning* (UDL as developed by CAST (Rose, 2000). UDL's principles are that the planning and preparation of materials, methods and assessments are cognizant of every type of learner and not a 'one size fits all' design (Rose, 2000). This framework has recently been employed in an Irish context for the *Further Education* (FE) sector with the specific purpose of fostering inclusivity and accessibility in that curriculum (Quirke & MacCarthy, 2020). This framework is laudable and is an indispensable methodology for promoting differentiation and inclusion thinking in teaching professionals.

A second popular instructional design system employed in the field is Barak Rosenshine's *Principles of Instruction* (Rosenshine, 2012). Rosenshine has 17 instructional procedures which are then synthesised into 10 principles (Sherrington, 2019). These principles concentrate on the processes of sequencing, questioning, reviewing and staging (Rosenshine, 2012; Sherrington, 2019). According to Rosenshine, his 'accessible' principles are rooted in evidence that have stood the test of time for the fields of cognitive science and instructional strategies and from the practical experience of master teachers (Rosenshine, 2012; Sherrington, 2019).

In the Irish professional development of instructional strategies field, there are currently a number of instructional design consultants working with schools in the post-primary system. Each has their own instructional design framework. These individuals have been sourced and introduced to Ireland's schools and teachers through the work of the National Association of Principals and Deputy Principals (NAPD) (Byrne, 2021). They include Mike Hughes who champions an approach called the *Magenta Principles*; a system which promotes learner engagement and thinking (Byrne, 2021). There is also the Canadian, Barrie Bennett, who describes his creation, *Instructional Leadership,* as the point where the art and science of instruction meet (Bennett et al., 2003). The *Learner Powered School* system, mainly introduced to Ireland by Graham Powell, aims to spotlight 21st century learning in systems deeply resistant to change (Claxton, 2002; Claxton et al., 2011). The recently deceased Paul Ginnis also frequently presented his *Teacher's Toolkit*, which integrated learning techniques, teaching methods and cognitive science into classroom practice, before his regrettable passing.

Each of these systems have laudable elements and can be labelled as influential as they are employed in practice in this jurisdiction currently, but only one potential investigative focus fulfilled all of the following criteria which were fundamental to the research design of this study:

- Needed to be compatible with the Interpretivist tradition
- Needed to integrate pedagogical knowledge with content knowledge

- Needed to acknowledge the complexity and the interrelated nature of the teaching knowledge bases
- Supported by an extensive theoretical underpinning
- Had stood the test of time and had adapted to, and acknowledged practitioner and academic criticisms and contestation

For these reasons, coupled with the established nature of the concept having been engaged with academically and practically for thirty-five years, Shulman's *Pedagogical Content Knowledge (PCK) Framework* was chosen as a framework for unveiling pedagogical understanding and practice. This research required a focus that could authoritatively frame a pedagogical investigation and PCK has been consistently influential in this space.

Using PCK to Unearth Pedagogy

To reiterate, this study examines teachers' documented understanding, and practice, of pedagogical content knowledge (PCK) in the context of the publication of a new suite of policies focussing on teaching and learning at junior cycle level in Ireland. This section explores how PCK understanding, and practice has been diagnostically described since its creation. It examines the literature of the instructional strategy field which promotes pedagogical knowledge that is more than just 'tips and tricks', absent of theoretical underpinnings. It explores a PCK which requires deeply clinical and integrated subject specific strategies which are responsive to the context of the local curriculum, context and learner; something sought after by authors and advisors of Irish educational policy (Hislop, 2011; Pasi Sahlberg, 2012). PCK's selection as an investigative focus to assess pedagogical understanding and enactment is appropriate because it is a construct which both acknowledges complexity of practice, and interweaves the pertinent strands of teacher knowledge in ways that are accessible to the pre-service teacher (Gess-Newsome, 1999). PCK's applicability to the *Initial* phase of the teacher education continuum is one of particular interest, given the previously suggested arid landscape of research in this area. Also, it is of particular value, given

that this study specifically explores the pedagogical perceptions and practices of these PSTs who are learning to teach.

Shulman's PCK framework has shown resilience and malleability by surviving a period of intense policy churn over the last four decades (Carlson et al., 2015; Shulman, 2015). It has experienced expansion and revision and, according to its creator, has remained true to its principles (Shulman, 2013, 2015). Shulman's concept has been added to and progressed by numerous contributors during that time. This cumulative development culminated in a new model published subsequently to an international conference of academics and practitioners examining PCK in 2012.

In this current study, this revised model is integrated, with Loughran's PCK enactment concept of *CoRes*, a *Content Representation* tool used to elicit practitioner's PCK, to construct the investigative framework used in Chapter 4 (Loughran, Mulhall, et al., 2008). The decision to fuse the 2012 Framework with Loughran's instrument was determined based on a desire to explore the theoretical and the practical implementation concurrently. It is designed to reveal explicit pedagogical strategies, capacities, practices and reasoning. This fusion also contributes to a deductive analytical framework for a *Qualitative Content Analysis* of the respondent PSTs portfolios explained later in the study.

Origins and Relationships of Pedagogical Content Knowledge

This section explores the contextual foundations from which Shulman's construct emerged. It also examines the purpose that Shulman had in mind during its development, and the educational practices that Shulman hoped it would impact.

Responding to Schon (Schon, 1983), Shulman set out to establish teaching as an acknowledged profession of complex practice. One of the criteria required for the inclusion of teaching under Schon's *Professions Framework* was the establishment of an exclusive 'knowledge base' for teaching praxis. Establishing exclusivity in this

suggests that there could be an overarching shared codex of knowledge, principles and practices for what teachers did in their classrooms; knowledge that was distinctly unique to educational practitioners. Shulman's primary objective was to identify that knowledge base. This involved focussing the microscope on the clinical reasoning and practice of teachers in order to unveil the explicit from the tacit (Britzman, 2012).

Shulman opined that the scholarship of practice and the field of learning science did not command adequate significance in the landscape of educational research literature, as produced by teacher education scholars. Through his work with the medical professions, he observed that the clinical and diagnostic elements of teachers' work were largely absent in their preparation and support structures (Shulman, 2015). In Shulman's opinion, educational policy makers, influenced by the focus of educational research, had vacillated their emphasis and concern over the previous hundred years. "A century ago the defining characteristic of pedagogical accomplishment was knowledge of content" (Shulman, 1986, p. 7). In the 1980s United States world of Shulman, the focus was completely on basic teaching competencies, absent of concern for "how subject matter was transformed from the knowledge of the teacher into the content of instruction", (Shulman, 1986, p. 7). This pendulum policy focus, combined with his frustration with the dearth of practice focused research, encouraged him to concentrate on diagnosing content transforming pedagogical practice (Gess-Newsome, 1999). He hoped that content transforming pedagogical capacity could be refined from teacher generation to generation building effectively on the research, practice and experience of those that had gone before (Shulman, 1987), moving away from what he called; a profession of collective amnesia (Shulman, 1986).

His focus for ITE was to move it from what he considered to be an excessive concentration on basic teaching operations and procedural instruments (*General Pedagogical Knowledge*) to a platform which authentically integrated content knowledge and pedagogical knowledge. This integration would concentrate on what Shulman called the "teacher education blind spot"; how disciplinary subject matter was transferred from the knowledge of the teacher in to the content of instruction

(Shulman, 1986, pp. 7-8). Shulman acknowledged that methods such as direct instruction, wait time, classroom management and higher/lower order questioning dominate teacher education programmes. He perceived that there was not a corresponding focus on these strategies integrated with the purposes of the subject discipline, and the "sound reasoning" explanations as to why specific methods were deployed at specific times. The types of issues which Shulman wanted teacher education programmes to concentrate on were:

- Where do teacher explanations come from?
- How do teachers prioritise what to teach?
- How do they formulate key questions?
- How do they represent and analogise key learning?
- How do they translate their subject knowledge from their degree, into accessible learning for novices?
- How do they predict learner misconceptions?
- How do they redress flawed or muddled textbook content disconnected from the learner?

From his background research he summated that cognitive scientists address these questions from the perspective of the learner but "research on teaching has tended to ignore these issues with respect to teachers" (Shulman, 1986, p. 8). Shulman believed that elements of these pedagogical approaches would not be generally applicable and would require specialised enactments depending on the subject discipline that the teacher was engaged with.

Initially, he devised a model comprised of three domains of teacher knowledge to help illustrate the type of knowledge which he believed was being obscured and deserved more focus. The included domains were *subject knowledge*, *curricular knowledge* and *pedagogical content knowledge*. It was the latter strand which Shulman believed separated the subject specialist from the pedagogue (Berry et al., 2008) and he, with others, believed that attention to this area would have the greatest impact on teaching

practice augmentation (Grossman, 1990). Teachers, like subject matter experts, comprehend the substantive and syntactic structures of a subject discipline. However, beyond those other subject matter experts, effective teachers also grasp the representative and analogical means by which to unveil those understandings, in a critical but often more simplistic manner, to a young learner. This is a visual representation of Shulman's original PCK concept.

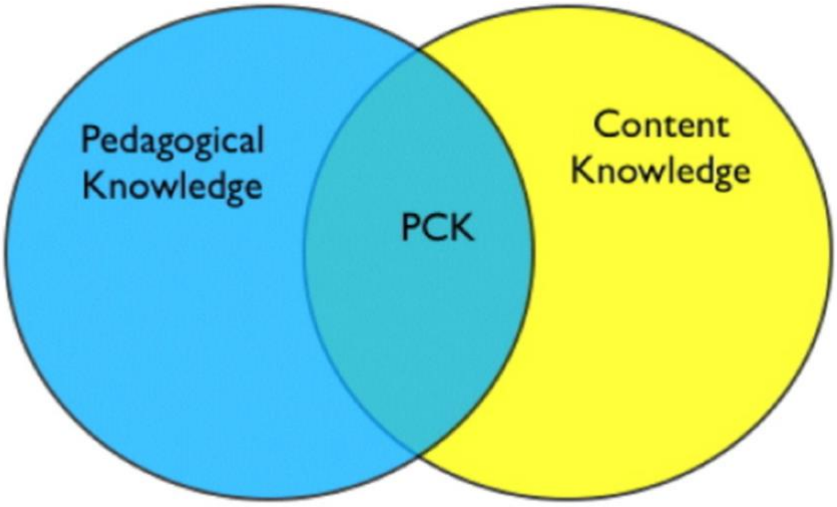


Figure 3.1 PCK Model Influenced by Shulman

It is important to acknowledge that Shulman and later respondents accepted that while PCK, in their opinion, is a distinct form of teacher knowledge, it is defined by its relationship with other forms of teacher knowledge (Carlsen, 1999). PCK is not isolated; rather it is interwoven with the other strands of teachers' professional knowledge such as knowledge of students, assessment knowledge and curricular knowledge. Each knowledge domain, according to Shulman is drawing on and contributing to the other (Shulman, 2015). Shulman claims to have sourced the domains of teacher knowledge, represented below, from a range of origins. He was informed by scholarship from the content disciplines, curricula, assessments and policies from school settings, sociological research on schooling and craft knowledge (Shulman, 1987).

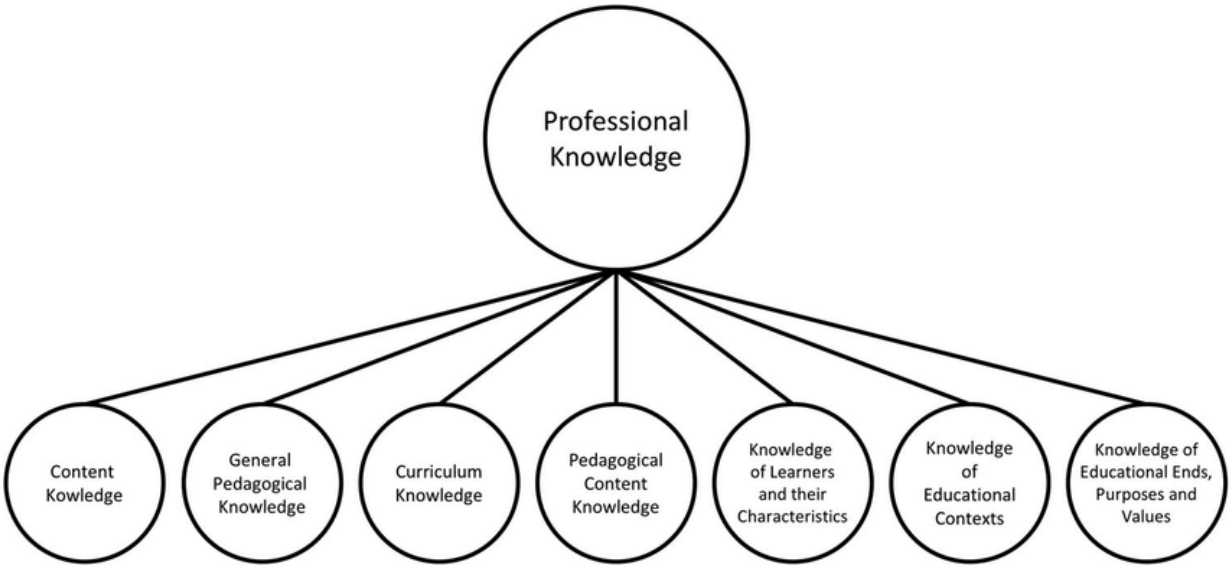


Figure 3.2 Teacher Professional Knowledge according to (Shulman, 1987)

Pedagogical Content Knowledge in Practice

> "A very learned man may profoundly understand a subject himself, and yet fail egregiously in elucidating it to others"
>
> 1861 petition to California's Superintendent of Public Instruction by *Committee on State Normal Schools*; quoted in MacDiarmid & Clevenger-Bright, 2008, p.134 – (Cochran-Smith et al., 2008)

Shulman described PCK as the art of both understanding the subject matter and also understanding how your target audience conceptually and cognitively grapple with it from their perspective (Shulman, 1987; Shulman, 1986; Zeidler, 2002). His conception of PCK framed teaching as a complex, skilled and purposeful activity. The idea that teaching was purely a process of content transmission, and that learning was a process of absorption of the same, was rejected. In his view, teaching involved creating, or adapting, powerful analogies, constructing models, demonstrations, illustrations and examples which aim to facilitate the learner's subject discipline understanding to grow (Shulman, 1987; Shulman, 1986). It requires teacher reasoning, adaptability and flexibility to consider time, place and learner contextually in each learning situation, with the aim of formulating the subject in a way that makes it comprehensible to others (Shulman, 1987; Shulman, 1986).

His PCK concept describes a dramatic process by which novice/experienced teachers move from understanding the content themselves, to the position of effective expert; one who can transform deep knowledge of content into adaptive pedagogically powerful forms for learners (Park & Oliver, 2008). This pedagogical reasoning requires an integration of curricular knowledge and a disciplinary knowledge which envelops the other engaged teacher knowledge domains. This overarching disciplinary knowledge enables the teacher to critically work with the curriculum design which outlines principles, aims and outcomes, alongside disciplinary entry points, journeys, detours and destinations which are cognizant of the discipline's substantive and syntactic structures.

The following section describes a linear process of reasoning and action in relation to PCK, but this is only for the purposes of description. In reality, the complexity of the operation enables practitioners to initiate the process from many different entry points.

The wellspring for PCK pedagogic reasoning is to identify a single concept, or group of big core ideas, within a subject discipline that, in the practitioner's curriculum informed opinion, warrants prioritisation. These could be "substantive or syntactic disciplinary concerns", or an amalgamation of both (Shulman, 1986, p. 9). Teachers should not only be able to communicate a central tenet of their discipline to learners but be able to explain how/why that tenet became central in the discipline and how it connects/informs and is informed by other disciplinary propositions? This interplay, together with how competing disciplinary claims or controversies are adjudicated, form the syntactic aspect of the discipline. The substantive is the disciplinary content and its mode of representation.

It is important for the practitioner to have a deep adaptive mastery of the chosen concept(s) and to know how it/they link with other key knowledge in the subject discipline. Proficiency in this assists the practitioner to determine potential learning purposes for the nascent learner. The learning purpose could focus on factual, conceptual, procedural or metacognitive knowledge, or an amalgamation of the same.

Once learning purpose is established, the practitioner assembles appropriate resources which may be text based, visual or interactive. These resources will often still require additional metaphors, explanations and analogies (scaffolding) to connect the sought learning meaningfully for the young learner (Bruner, 1996; Vygotsky, 1962).

Following this, the practitioner decides on a teaching method(s) which they believe will be most likely to stimulate authentic and effective learning for the learner, considering the relevant known contexts. These could be, for example, lecture style, independent discovery style learning, gamification, didactic/dialogic style, cooperative learning, project based, etc, and potentially combinations of the same. Finally, the practitioner considers the proposed learning journey and attempts to foresee learner thinking and potential misconceptions or acquisition difficulties they could have, devising differentiated resources and tasks that scaffold the learning appropriately. Much of these stages happen before action but can also be engaged in during action by the practitioner (Shulman, 1986).

Learners gain confidence through the demonstration of their learning. The evaluation and assessment of/for the learning process potentially also allows for diagnostic feedback from the learner's demonstration of acquired learning. This feedback can inform the practitioner of liabilities in their planning and orchestration and can result in new comprehension and a reconstituted repertoire. As clearly stated above, although the pedagogical factors and processes illustrated in Figure 3.3 are represented in sequence, Shulman did not anticipate that the process would happen in such a formulaic way. He saw the elements more as components of a circuitous toolbox, that could be dipped into as required, from any starting point.

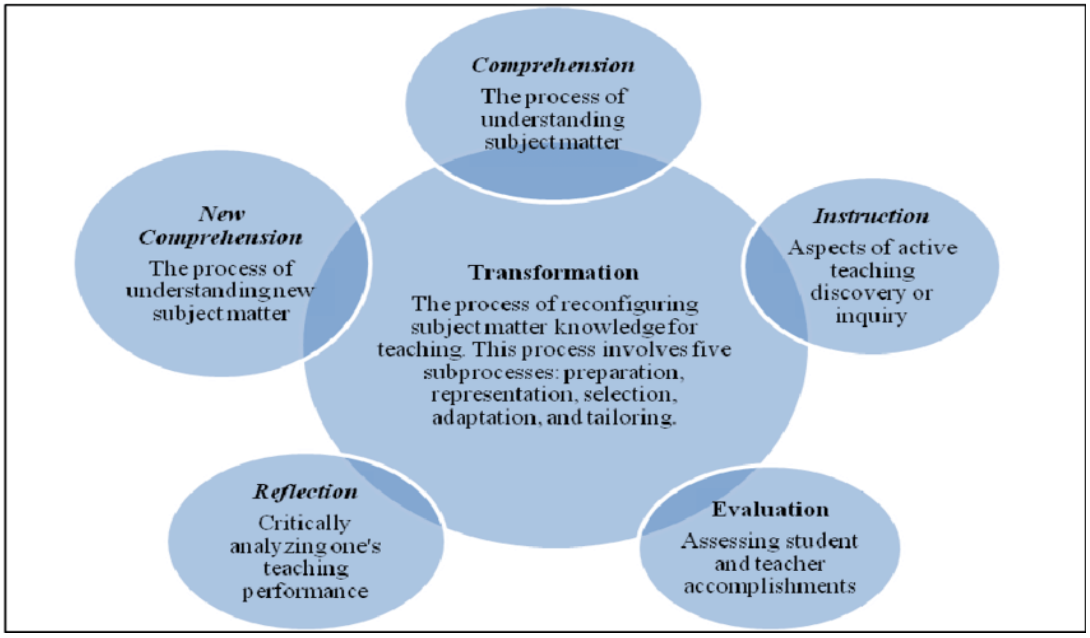


Figure 3.3 Graphic based on the pedagogical process of PCK- (Shulman, 1986)

One of the key differences in this PCK conceptual process, in comparison to teacher-centric content transmission, is that although much learning begins with content, and the learning of the content may well be a worthy purpose in and of itself, this conceptual process acknowledges that the content can also be a vehicle for achieving other educational purposes (Shulman, 1986). It is suggested that the learning outcomes of this approach have the potential to be more extensive, in contrast with a more restrictive behavioural focus on content retention. The cognitive, affective, psycho-motor, skill developing opportunities contained in each discipline's content are the 'treasure within', (Delors, 1998), and PCK can help to stimulate and agitate their emergence, potentially leading to a deeper substantive and syntactic disciplinary understanding for the engaged learners .

Shulman wanted the emergence of PCK to support teachers to "make visible important aspects of learning that would otherwise remain hidden" and to ensure that the improvement impact is made explicit to the key educational stakeholders, the learners (Shulman, 2007, p. 2). This is in line with constructivist pedagogical theory which purports that the learner needs to make sense of the phenomenon in a way which allows them to integrate it with existing cognitive structures, or to begin remodelling in order to accommodate (Brophy, 2010; Illeris, 2009; Vygotsky, 1962).

Orchestrating a process of disequilibrium, or cognitive dissonance, is a key concern for the PCK influenced practitioner.

Critics of Shulman's Pedagogical Content Knowledge Construct

Shulman's construct has faced criticism within the fields of teacher education and teacher professionalism; fields on which Shulman was particularly focussed. His work has also been challenged in related fields, which were not of Shulman's primary concern. This section presents, analyses and responds to those critiques.

In Shulman's view, PCK was not an instrumentalist deconstruction of content into bite-sized chunks, but a purposeful creation "to ensure that particular content is better understood by students in a given context, because of the way the teaching has been organised, planned, analysed and presented" (Loughran, 2013, p. 8). He demonstrated concern with the contemporary professional conceptualisations of the practice of teaching, and he explicitly renounced reduced competence mechanisms for professional accountability (Shulman, 1987). His particular worry was that a framework, such as his, could be colonized by those reductionists who wanted to diminish the practice of teaching to something procedural, which was easy to monitor and assess (Shulman, 1987). He gives an example where he claims policy makers lifted a complex research suggestion, that learners performed better if they knew the purpose of the learning, and applied it as a simplified requirement that teachers had to write the learning intention on the board at the beginning of each lesson (Shulman, 1987). According to Shulman, the simplistic writing of an intention does not even guarantee effective communication, let alone assure engagement and motivation for the learner. Such a teacher action certainly does not, in and of itself as a process, demonstrate the pre-action thinking and planning which aims to interweave the learning purpose into the pertinent aspects of the lesson.

Shulman situated his work in the fields of teaching professionalism and teacher education/preparation. He saw his efforts as being dedicated towards a professional conceptualisation of the practice of teaching, rather than a professional mechanism for

accountability (Shulman, 1987). However, Shulman's early work gave rise to a number of significant objections. His crusade for teaching to attain professional legitimacy as per Schon's definition, (Schön, 1983), provoked critical responses. These included both left and right wing political contentions concerned with the exclusivity of the professions where professional knowledge was potentially being colonised for the few (Pitman, 2012).

Additionally, larger international systemic issues, such as neoliberal accountability mechanisms mandated by bureaucrats in countries like the UK under Thatcher and New Labour, foregrounded those bureaucrats' attempts to enforce curriculum delivery on an impoverished teaching profession (Ball, 2007; Settlage, 2013; Sugrue, 2006). Despite Shulman clearly positioning his concept as anathema to these bureaucratic mechanisms, one can understand his concerns that the framework potentially could be manipulated and colonised by those fixated by accountability. Such a risk had been flagged decades before by Bloom (Bloom et al., 1956) when he opined that the use of competences might result in a reductionist form of teacher accountability in education if not crafted in a responsible developmental manner.

The field of teacher education's debate consistently witnesses PCK straddling the central ground as competing discourses attempt to shift the balance to their particular perspective (Depaepe et al., 2013; Pitman, 2012). The possibility of technical and craft knowledge (*phronesis*) swamping the hegemony of theoretical knowledge (*episteme*), (McIntyre, 2003) was construed as a perceived threat to the continued position of Education Departments, and thus teacher education, in HEI's (Ball, 2007; Czerniawski & Menter, 2018).

The learnification of education over a teaching-centric perspective (Biesta, 2015; Deng, 2015, 2016), and advocacy for the professionalism, not professionalization of teachers (Fullan, 2007a; Hargreaves & Fullan, 2012) can be presented as polarised dichotomies. However, it is this study's contention that PCK conceptually attempts to straddle the middle ground between these binaries. When employed authentically, it is working to interweave and fuse, acknowledging the complexity of the profession's practice.

Indeed, Shulman strongly believed that his PCK construct existed to mediate between what Schon suggested as the high hard ground of theory and the swampy lowlands of practice, (Schön, 1983).

Other academics and practitioners saw alternative mechanisms through which teacher knowledges, such as PCK, could be promoted. Despite Shulman's consistent defence against top down impositions, and his rejection of the concept of simplistic teaching standards, as when he explained "If you try to measure accomplished teaching and the understanding and skills needed to engage in such teaching by using the kinds of assessment methods that were currently extant, more harm than good would be brought on the teaching profession" (Shulman, 2015, p. 7), new generations proposed alternative methods for the promotion of PCK within the continuum of teacher development. For example, *Reflection in and on action* was suggested as a more professionally autonomous process which could incorporate its development (Christensen et al., 2001; Loughran, Korthagen, et al., 2008; Park & Oliver, 2008). This facilitated a more constructivist learning approach centred around the PST exploring and adapting through a process of research, practice, and reflection.

The *Teacher Research Movement* also advocated for the production of teacher knowledge to be generated by the teacher rather than mandated by the bureaucrat (Ballet et al., 2006; Cochran-Smith & Lytle, 1999a, 1999b). In practical terms, this movement sought PST action research as a methodology, to be integrated into teacher education programmes. Like the *Reflection in and on Action* movement, the focus here was on facilitating an exponential inductive development of PCK through a fusion of the theoretical and the practical centred on the personal experience of the practitioner in their own specific context.

The PCK construct has also been addressed critically in fields that, in this researcher's opinion, were not Shulman's original primary focus. In the fields of critical pedagogy and cultural studies Segall, although a general advocate of PCK, highlights perceived shortcomings with the way Shulman defines and delimits content knowledge and pedagogical knowledge (Segall, 2004). Challenging Shulman's assertion that

pedagogical knowledge is the preserve of the teacher, Segall claims that there is pedagogy at play in any type of authorship where representation decisions have consequences for the meaning produced (Segall, 2004, p. 496). Segall really wants to extend PCK to both acknowledge that representation in curricular materials is also a 'pedagogical move' (Segall, 2004, p. 498) and teacher education needs to develop PST's pedagogical reasoning to include critical analysis of pedagogy already imbued in selected curricular texts and resources.

This study argues that Figure 3.1 above clearly illustrates the porous nature of the PCK knowledge domains with each intersected and influencing the others. Sole exclusivity of pedagogy for the profession of teachers, if it was Shulman's intention, could certainly be identified as a weakness of his PCK construct. However, this study contends that if that was the case, it can be explained by the context of the influence of Schon's work and Shulman's own focus on crafting professional status for teachers and addressing what he saw as a glaring teacher education blind spot. Also, Figure 3.5, which details the PCK reconfiguration which influences this piece of research, clearly acknowledges teachers' and students' orientations, beliefs and habits of mind. Coupled with Shulman's concentration on developing a criticality on the discipline's substantive and syntactic knowledge would suggest that Segall's concerns were comprehended in the revised expanded PCK model of 2012, which was wholeheartedly supported by Shulman (Shulman, 2015).

Another example of criticism outside Shulman's home disciplines is Deng's PCK representations in the field of *Curriculum Theory*. Deng presents Shulman's construct as being on what he considers to be the wrong side of the impoverishment of propositional knowledge in schools and the 'learnification' of education (Deng, 2016, 2020). In the context of seeking to promote democratic access to 'Powerful Knowledge' (Young & Muller, 2013), Deng describes an extreme practice of *social constructivism* where teachers, restricted by 'learnification', are prohibited from transmitting any propositional disciplinary knowledge to their learners. Shulman's construct clearly positions itself where the reasoned teacher will draw on the most appropriate pedagogical method for the specific context, moment and purpose, while

also insisting that “Mere content knowledge is likely to be as useless pedagogically as content-free skill” (Shulman, 1986, p. 8).

Deng also contends that PCK aims to usurp the role of the curriculum theorists in the curriculum development process by relying on the classroom teacher to interpret and transform disciplinary knowledge into school subject knowledge (Deng, 2009, 2011, 2018a). Deng’s articulation of PCK for this contention is not shared by this researcher. It creates flawed analogues and dichotomies which fail to acknowledge Shulman’s initial PCK positioning. For example, Shulman states “we must include knowledge of the structures of one's subject, pedagogical knowledge, of the general and specific topics of the domain, and specialized curricular knowledge” (Shulman, 1986, p. 13). Indeed, Shulman’s position on this was consistent over the decades following his seminal publications in the eighties (Shulman, 2015). Zembylas concurs when he states, “In Shulman’s analysis, teachers need to master two types of knowledge: (a) content, that is, knowledge of the subject itself, and (b) knowledge of the curricular development (Zembylas, 2007, p. 357). In order to support this stance contrary to Deng’s position, one need only look at examples of PCK enactment which clearly demonstrate the importance of curricular knowledge in the clinical reasoning of the practitioner (Hammerness et al., 2002).

I created Figure 3.4 to challenge Deng’s position on PCK where he claims it attempts to usurp the role of the curriculum developer. This study, together with the advocates of Shulman who have enacted PCK, agree with Zembylas that Shulman’s concept did not look to usurp the role of the curriculum developer, but to progress the clinical reasoning of the classroom practitioner working in concert with the curriculum developer. This role would be one that would also be supported by (Segall, 2004) who would welcome a further development of critical pedagogical reasoning. The figure depicts an all-enveloping subject disciplinary knowledge, curriculum subject content and beyond, and values attitudes and beliefs of the teacher. In the middle section are the domains of teacher knowledge as crafted by Shulman in response to Schön (Shulman, 1987). The inner section are the processes of pedagogical reasoning as depicted at Figure: 3.3 and explained by (Shulman, 1986).

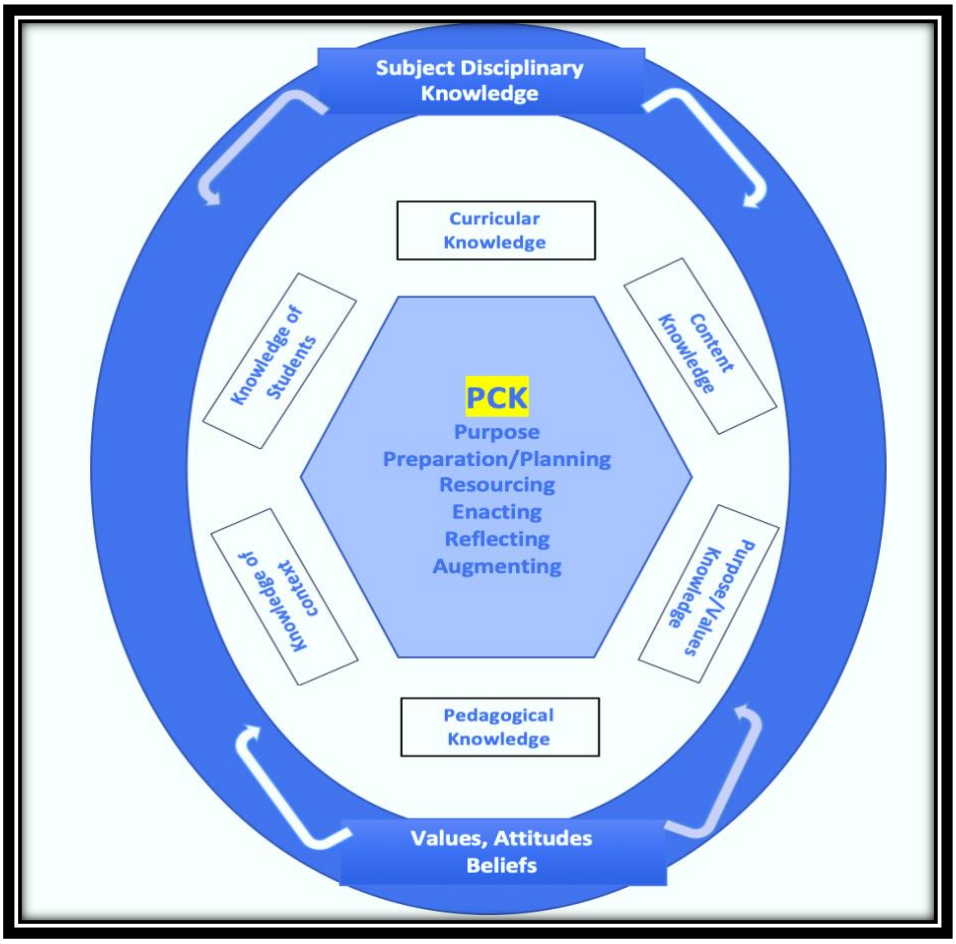


Figure 3.4 Shulman's Clinical Reasoning in response to Deng (Dooley 2021)

Young (Young & Muller, 2013) similarly posits that it is the acquisition of powerful disciplinary knowledge that enables the student to classify, organise and verbalise their own knowledge and experience, and then begin to critically question the authority of that knowledge, eventually innovating and reconceptualising it. This study opines that the importance of this learner acquisition helps us to understand why PCK is so important to develop in a teaching profession. By considering the different options that they can deploy in order to bring the subject content to life in meaningful ways for the learner, practitioners have the potential to begin to become aware themselves of the syntactic and substantive structure of their discipline and can thus also challenge the authority on which any extant curriculum was built upon. It can be argued that this is in the interest of society from generation to generation. 'Passive delivery boys of the system' who only protest which content will be on the final high stakes exam is not

enough and will not constitute informed knowledge-powerful participants of the consensus building curriculum process in Ireland.

The Evolution of Pedagogical Content Knowledge

In this section the evolution of PCK from its genesis to its most recent comprehensive iteration through the work of multiple influencers and contributors is discussed and analysed.

As noted earlier, Shulman always argued that PCK was not an isolated construct but a teacher knowledge that operated by integrating with other distinct teacher knowledges. Shaped by their responses to some of the debates outlined above, scholars and practitioners worked to develop the explicit components of teacher knowledge during the decades that followed Shulman's creation of PCK. For example (Grossman, 1990) reorganised Shulman's initial formulation of the specialised knowledge base for teaching into four major components, including *General Pedagogical Knowledge*, *Specialised Content Knowledge, Contextual Knowledge and Pedagogical Content Knowledge*, defining the latter as including: 1. Knowledge of the Aims of Teaching; 2. Knowledge of the Curricular framework; 3. Knowledge of Specific Teaching Strategies; and 4. Knowledge about Students. Grossman further argued that the *purpose of the subject matter* and *integrated curricular knowledge*, that is the overarching concepts and skills required, were additional necessary components to teacher knowledge (Grossman, 1990). *Knowledge of Assessment* was added as a further component of teacher knowledge in the late nineties (Magnusson et al., 1999). These additions and tweaks provided stimulus for the PCK concept's refinement which will be described below.

Since Grossman, PCK has been subdivided into alternative internal constructs: 1. *Subject Content Knowledge*, 2. *General Pedagogical Knowledge* and 3. *Subject Specific Pedagogical Content Knowledge* by Abell (Abell, 2008). On the other hand, Gess-Newsome et al created a different set of divisions: 1. *Content knowledge*; 2. *Pedagogical Knowledge;* and 3. *Contextual Knowledg*e (Gess-Newsome et al., 2019). The importance of contextual knowledge of the learning site was also emphasised as a

central contributing factor to the successful enactment of PCK by Barnett & Hodson (2001). The original framework proposed by Shulman has been further developed over the subsequent decades and PCK is now claimed to be established as an accepted academic construct in the field of pedagogy (Loughran et al., 2004).

Shulman himself admitted that the original construct lacked the emotional, moral and motivational characteristics of teaching. He accepts that PCK should have been positioned more centrally on the theory-practice spectrum of knowledge, allowing for its dynamism and rejecting its framing as a stationary 'factual' concept. "I was so intent on combatting the missing paradigm of content that I did not devote attention to affect and motivation, nor to moral judgement and reasoning in teaching" (Shulman, 2015). He also believed it should have been more outcomes oriented, focussing on the evidence of student learning (Shulman, 2015, p. 9). Indeed, Shulman has commented that, considering the levels of augmentation to the original construct, he feels like a biological parent who gave a child (PCK) up for adoption and who is now being asked to comment on that child now she is fully grown, having been cared for and influenced by many parents in the intervening years (Shulman, 2015, p. 1). Taking Shulman's legitimate reflection into account, this study relies on a more recent synthesised iteration of PCK.

The most comprehensive reconceptualization of PCK since its genesis took place at the PCK Consensus Summit in Colorado in 2012. Twenty-two Science PCK researchers gathered with the express purpose of agreeing on a shared model of the PCK conceptual framework. They did so because they feared the intervening quarter century of work between Shulman's creation and the then present day, had created fractures and inconsistencies in the conceptual framework (Carlson et al., 2015). They wanted to draw together the leading pedagogical minds of the day to agree fundamentals and principles of PCK enactment, with the express aim of making the concept uniform and more robust because the concept had been under attack as being vague and inconsistent (Settlage, 2013). Shulman himself was involved and approved of the outcomes of the conference (Shulman, 2015).

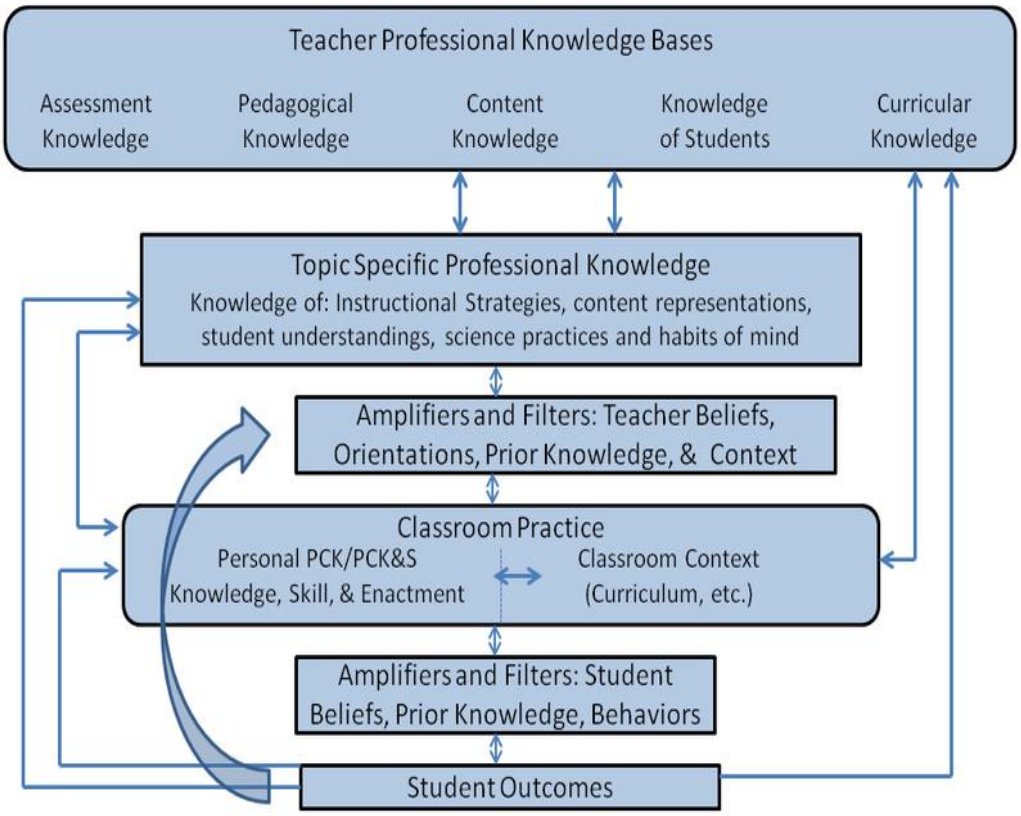


Figure 3.5: Shared expanded model of PCK 2012

In this updated PCK model, we can see the influence of contributors such as Grossman, Barnett and Magnusson that were outlined above. We can also see Shulman's own revisionist perspective with the inclusion of the amplifiers and the student outcomes. This expanded PCK model promotes the importance of the affective amplifiers and filters which are prevalent in students and teachers, as in all human beings. Ascertaining what these are, influencing them, and potentially disrupting them could be crucial in achieving any substantial pivot in pedagogical reasoning and/or practice. The more comprehensive structure of this model has resulted in it, as opposed to Shulman's earlier PCK construct iteration, being chosen as a significant influence on the framework employed for this study.

Values and Beliefs: The power to support and impede

Acknowledging Shulman's own acceptance that his concept originally lacked affect, motivation and moral reasoning, this section examines the field of beliefs as it influences the purposes and practices of ITE. It critically considers both the required prominence of belief dissonance provision in ITE, but also the ethical concerns that this provision reveals.

One particularly important addition to the 2012 PCK model (Figure 3.5), is the acknowledgement of the importance of teachers' beliefs. The field of teacher belief is complex and nuanced and straddles a number of disciplines (Darmody et al., 2020). It is essential to acknowledge at the outset of this section that an in-depth analysis of the field of personal and professional teacher identities (Bullough, 1997; Sachs, 2001; Zembylas, 2003), beliefs, values and attitudes (Cialdini et al., 1981; Clandinin & Connelly, 1987; Hollingsworth, 1989; König, 2012; Pajares, 1992), and motivations (Bandura, 2006; Baumeister et al., 2011; Brophy, 1984; Snowman et al., 2011) is beyond the scope of this study. However, an outline of teachers' beliefs, and their substructures of values and attitudes can still be undertaken with the narrower purpose of the impact on teacher preparation if the affective domain is not engaged and challenged (Dolan, 2017b; Pajares, 1992; Woodbury & Gess-Newsome, 2002)?

In the field of teacher beliefs, definitions are contested, and boundaries are described as blurry. Pajares' seminal paper, which has held venerable ground over the ensuing decades (König, 2012) includes the following synonyms employed by researchers in the field of beliefs; "values, judgments, axioms, opinions, ideology, perceptions, conceptions, conceptual systems, preconceptions, dispositions, implicit theories, explicit theories, personal theories, internal mental processes, action strategies, rules of practice, practical principles, perspectives, repertories of understanding, and social strategy" (Pajares, 1992, p. 309). In the face of this broad spectrum, this study is not able to engage with clarification or redefinition. It is more concerned with acknowledging the importance of the affective domain in the process of learning to teach. This is helpful in building on Shulman's revisions that argue that teacher

pedagogical preparation constructs cannot be exclusively theoretical or technical, in order to show why firm foundations of preparatory work by teacher educators is needed in order to facilitate pre-service practitioners' emancipation from potentially adverse earlier belief experiences.

This may be easy to write but certainly not easy to enact. Munby, drawing from Nisbett and Ross (1980) confidently states that "all human perception is influenced by the perceiver's schema, constructs, existing beliefs and understandings" (Munby, 1982, p. 11). Unfortunately, personal constructs and schemas are not always an accurate representation of established knowledge in a discipline or field. The development of belief systems, in relation to education, is suggested as a "lifelong enterprise" (Abell et al., 2009, p. 80), one which emerges from Lortie's apprenticeship of observation (Zeichner & Tabachnick, 1981), where, it is suggested, we are all products of the experience of our own schooling. Classroom intimacy is, moreover, a formative experience where all attendees emerge with some level of 'folk pedagogy' (Bruner, 1996). This classroom specific contribution to the construct of pedagogical schema is influenced by a myriad of factors relating to upbringing, life experience and other socialization processes in schools (Raths, 2001).

For those who decide to enter the teacher profession, the belief system and disposition towards how their subject should be taught, constitutes a powerful amplifier shaping how they approach their planning and preparation for the classroom (Grossman, 1990; Magnusson et al., 1999). Indeed, Irish research suggests that positive subject-specific observation experiences are a primary factor in forming the decision to enter the teaching profession in the first place (Devine et al., 2013; Hennessy & Lynch, 2017). This connection to the way teaching was approached by a respected teacher from youthful experience could form robust schemas and constructs of practice, as per Munby's representation mentioned above.

Furthermore, Grossman claims that the novice practitioner's disposition towards the purpose of teaching and learning is crucial, even if they do not have the methods and structures to implement it effectively (Grossman, 1990). Any efforts to challenge these

dispositions will need to be wary of the strategies employed to do so. PSTs are what Knowles, in his study of andragogy, refers to as adult learners, and require a different facilitative learning approach which acknowledges their life experience, and reduces the threat to the self (Knowles et al., 2020). Success at unsettling deeply guarded personal beliefs about purpose of teaching and learning is tantalizingly difficult to attain. The difference here is what Petty et al have defined as the two different routes of information processing; the central and the peripheral (Cialdini et al., 1981). Without gaining access to the 'central', the likelihood of disrupting deeply held beliefs is minimal. In order to give the PST the greatest opportunity for engaged focus and motivation to problematise teaching practice, it is argued ITE will need to develop strategies which encourage the emergence of the PST's personalised concerns of practice (Cialdini et al., 1981; Clarke et al., 2011; Deng, 2004).

In the Irish context, where there had been a resolutely stable system of educational practice in place for generations, there is now a collection of policies which look for a substantial change in that practice. This raises the question of how to mitigate the "sobering suggestion that beliefs, by their nature, are stable and therefore prove to be very difficult to influence through opportunities to learn" (König, 2012, p. 10)? Others, like Raths (2001), argue that the more importance and value ascribed to the belief by the person, the more difficult it is to change. The question we will continue to reflect on through this thesis is how likely is implementation validity (Buachalla, 1988; Pressman & Wildavsky, 1974; Van Meter & Van Horn, 1975) in policies or curricula that seek substantial, even paradigmatic, change, when parents, teachers, students, academics, teacher educators, politicians and policy makers are products of a stable system, such as the Irish secondary school system?

Bruner previously asked what optimism remain for fields, such as teacher education, when we are warned that strongly held prior beliefs held by teaching candidates can hinder learning about teaching (Bruner, 1966)? Certainly, there is a moral obligation for teacher education institutions to challenge and disrupt candidate beliefs which the institution deems as potentially harmful to future students of the prospective teacher. The field of teacher education would not be on its own in the professional world if it

were to initiate formal assessment for candidates' potential harmful values and beliefs. The *Health Professions Admissions Test* (HPAT) was introduced in Ireland in 2009 as an extra entry requirement to the medical professions in addition to the Leaving Certificate Points System. One third of the questions asked in the test are on *Interpersonal Understanding*. This section allows the candidate to demonstrate their understanding of the thoughts, behaviour and/or intentions of other people (ACER, 2021). This contested metric acknowledges the affective and the cognitive in its selection process for initial admission to medical professional preparation.

Of course, this area is not one of calm idyllic waters. Great power is held by institutions charged with preparing the next generation of professionals. Preparatory institutions don't necessarily have hegemonic knowledge on 'appropriate belief systems' without opposition in the field of teacher education. There is also something inherently wrong with working to change the beliefs of others, especially from a position of power (Raths, 2001). Yet it is widely accepted that these belief schema and constructs are a vital initiation sequence to the acknowledgement of schema disequilibrium and the adoption of new constructs which reflect this. Maybe as Katz states, it may be more tolerable if ITE institutions say to themselves and their candidates that "we mean to strengthen certain dispositions in our candidates' repertoire" in (Raths, 2001, p. 7).

Existing In-Career Pedagogical practice in Ireland: Pedagogical Heritage

This section looks at the pedagogical heritage in post-primary teaching practice in Ireland. PSTs spend approximately half of their initial formation on school placement. What type of schools, staffrooms and practitioners does research suggest that they encounter generally? And, by association, can we understand more clearly the types of educational settings and educational practice that they are the products of themselves?

Teaching in Ireland has long been lauded as a profession of high respect, which attracts academically strong candidates, particularly in comparison with the country's international OECD comparators (Coolahan, 2001; Coolahan et al., 2017; Coolahan et

al., 2003; McKenzie et al., 2005; O'Donoghue et al., 2017). However, the lack of development of pedagogical proficiency, one not heavily influenced by the contents of terminal assessments, has long been noted as a weakness in the country (Assessment, 1999; Burns et al., 2018; Devine et al., 2013; Gilleece et al., 2009; Gleeson, 2012; Hyland, 2011; Jeffes et al., 2013; MacPhail et al., 2018; Morgan, 2005; OECD, 1991; Smyth, 2009; Smyth et al., 2011; Smyth et al., 2007; Smyth et al., 2006; Smyth et al., 2004; Sugrue et al., 2001). The 2002 *Advisory Group on Post Primary Teacher Education Report* mirrors recommendations from the 1991 *OECD Review Group*, relating to the didactic nature of Irish Teaching and the trend to be "purveyors of facts and coaches for examinations", as if the interim eleven years had not taken place (Byrne, 2002, p. 46).

Major longitudinal research carried out during the noughties strongly suggested that traditional teacher-centric content transmission routines were rooted in practice in Ireland. This ESRI research was commissioned after the publication of a report which reviewed the Irish *Junior Certificate*, a curriculum in operation for 10 years at the time (Assessment, 1999). Teaching practices such as overreliance on the textbook (Smyth et al., 2007, p. 122), disinterest in the presentation of the subject (Smyth et al., 2004, p. 53) and a monotonous pedagogical style (Smyth et al., 2007, p. 122) were cited as having a detrimental effect on student engagement. Only 15% of students felt that the teacher doing most of the talking was very helpful (Smyth et al., 2007, p. 123), while reading from the textbook "made a subject difficult to understand and hard to concentrate on" (Smyth et al., 2004, p. 63). Longitudinal research on teaching, carried out contemporaneously by Maynooth University, suggested similar findings where "textbooks frequently took much of the real initiative in teaching away from teachers themselves" (Hogan et al., 2007, p. 28). These findings suggest that, in general, the Irish curriculum and assessment system encourages the teaching profession to rely on other individual's curricular interpretation, as published in subject specific textbooks, as opposed to interrogating the curricular documents themselves.

In Ireland's summary report for the OECD's 2008 TALIS (Teaching and Learning in Schools), Irish teachers were presented as somewhat less supportive of constructivist

beliefs, and somewhat more supportive of direct transmission beliefs than their comparators in each of the other five comparison countries (Shiel et al., 2009). Irish teachers also showed a significantly stronger preference for teacher led instructional practices than the other comparator countries (Shiel et al., 2009). The general pedagogical disposition is influenced by systemic features such as high stakes summative assessments (Looney, 2006). "The vociferous opposition of their unions to the downgrading of external examinations through the introduction of school-based assessment is indicative of a prevailing pedagogy based on knowledge transmission rather than student-centric learning outcomes" (Gleeson et al., 2020). The profession, generally, could be described as pedagogically conservative concerned with 'delivering' the curriculum and measuring the 'outcomes' of that delivery (Coolahan et al., 2017).

In late 2011, a report, which was to set the terms of reference for the formation of a new *Junior Cycle* curriculum for lower secondary education in Ireland, was published by the NCCA. It acknowledged that previous curricular reform had been devised, but that implementation, that actually changed the student experience, had not been successful because of what it termed the "power of the status quo" in terms of teaching praxis in Ireland (NCCA, 2011a, pp. 6-7). These 'status quo' practices do not appear to be limited to the lower-secondary sector. The current review of Ireland's *Primary Curriculum* highlighted the pedagogical challenge of significant curriculum overhaul as a "daunting challenge as our rapidly changing world necessitates the teaching and learning of twenty first century skills which often conflict with embedded teaching practices and curriculum structures within contemporary schools (Volante, 2018, p. 7). In a recent report, constructed as a foundation for reviewing Senior Cycle provision in Ireland, teachers, students and parents all referred to "pressure to cover the course, resulting in a focus on rote learning in order to prepare for the examination and the neglect of higher order thinking and broader skill development" (Banks et al., 2018, p. 60).

"Engaging with new pedagogical approaches, if it is to be something more than a superficial and half-hearted effort on the part of teachers, means gradually opening up to new ways of doing things" (Hogan et al., 2007, p. 43). It is important to acknowledge that we are currently experiencing a fluid implementation period of new policies, so it

is not fair to assume absolute results from a phase of transition. However, if the pedagogically conservative disposition, described above, prevails in Irish staffrooms, then this presents two considerable obstacles to the implementation of the new policies at lower secondary. Firstly, it suggests that some current established and experienced practitioners may be circumspect and slow to authentically adopt pedagogically innovative strategies contained within new policy. Secondly, if that is their belief schema/disposition, they have the potential to strongly influence the beliefs/practice of the PSTs who they mentor, and model practice for, in their school.

Initial Teacher Education

General Principles and Challenges Internationally

ITE has long been internationally acknowledged as a key phase in the continuum that is the formation of a teaching practitioner. It is positioned at the vanguard, challenging Lortie's 'Apprenticeship of Observation' (Lortie, 1975), in order to initially stimulate "a set of high-level beginning competences to be built on through the continuum" (T. Council, 2011, p. 12). Teachers are consistently acknowledged as key influencers of student progress (Harford et al., 2012; McKenzie et al., 2005). For this reason, it is suggested, educationally focussed policy makers and politicians concentrate on ITE when trying to 'augment' the education system. Countries that rank highly on OECD educational performance charts, also rank highly on the level of investment which they divert into teacher education (Harford et al., 2012).

This crucial formative period in a teacher's preparation has been described in a number of different ways by scholars of the field of teacher education:

- A significant and influential phase of teacher practice, where PSTs have not formed a praxis habitus which might obstruct adoption of new principles or concepts (Darling-Hammond, 2017; Feiman-Nemser, 2001)
- A place where every experience should prepare a PST for later deeper experiences of a more expansive quality and over emphasis on initial proficiency avoided lest it close the mind of the PST to possibilities of future progressive growth (Dewey, 1962)
- A time for forming habits and skills necessary for the ongoing study of teaching with colleagues throughout one's career (Feiman-Nemser, 2001)

- An opportunity for PSTs to understand teaching in more complex ways than their own experience as students afforded them (Lortie, 1975).

These stances agree on one thing: the significance of ITE in initiating an embryonic engagement in the professional complexities of pedagogy as one of ITE programme's key roles. This study aligns itself with this stance. ITE's specific pedagogic challenge, to initiate pedagogical thinking and attention to PCK, is considerable. It involves the reconceptualization of the core of educational practice; that is, how teachers understand the nature of knowledge and the role of the student in learning. (Elmore, 1996) suggests that this is as an area which rarely sees fundamental and lasting improvement.

He lists the following factors which, he suggests, impact the formation of pedagogical thought and practice in the teaching profession:

- Level of professional agency, study shows that some teachers have limited capacity for curriculum making
- Professional learning support (space and time for sense making/differentiation of how new policies and practice differ from that of old)
- Alignment across policies from different agents and agencies.
- Contrived or tokenistic engagement with teachers can lead to resistance to or disillusionment from curricular reform.
- Whether genuine discussions take place at school level as to what content in a subject discipline is of most worth.
- Teachers not only have to increase their pedagogical content knowledge they also have to increase their disciplinary knowledge in order to engage students in developing deep understanding and powerful knowledge (Elmore, 1996).

Elmore's work on the obstacles and barriers to pedagogical refinement suggests an outline of the type of focus that may benefit ITE, and the other stages of the teacher education continuum, to promote teachers' pedagogical efficacy and agency. Elmore's technical summation of needs, benefits by being added to discussions of the affective domain from the previous section of this review, in order to structurally combine into effective intervention suggestions at the ITE phase. In the Irish context, values and beliefs held by PSTs, combined with the suggested pedagogical practice 'power of the

status quo' presents further possible systemic obstacles in addition to Elmore's propositions. These three potential barriers go some way to classify the formidable pedagogical development challenge faced by ITE providers.

Candidates in the *Initial* phase of teacher education programs present similar and independent challenges which can impede pedagogical, and other habitus formation during teacher preparation. Previous observation experience has frequently and routinely been proffered as an influential inhibitor (Lortie, 1975), but PSTs' cultural and social backgrounds, subject knowledge proficiency, placement site context, interests and practice of ITE department teacher educators and dispositions of mentors are other potential, but not exhaustive, contributing factors which teacher preparation programs are charged with attempting to mitigate (Barnes & Smagorinsky, 2016; Feiman-Nemser & Remillard, 1995; Hollingsworth, 1989). Epistemological dissimilarities and divergence between what these teacher education candidates experience at the university site and at the placement site have been documented internationally (Darling-Hammond, 2006; Hobson et al., 2006; Zeichner, 2010), and at home (Hall et al., 2018), and add another arduous challenge for HEI teacher education providers to overcome. For example, findings from Hobson et al's longitudinal study in England suggested that over half of respondents felt that some of their HEI based learning was not relevant to being a teacher, whilst one third felt there were inconsistencies between expectations and practices of the university and the school site (Hobson et al., 2006).

Finland's reported ITE experience suggests that the types of practitioner role changes, currently looked for in an Irish context, require significant development of the professionalism of teachers throughout the continuum. If the teachers are to acquire sophisticated levels of pedagogical knowledge which enable them to comfortably design materials and methods which fulfil the aims and principles of the national curriculum, then systemic preparatory focus must be consistent with applicants from the commencement of their preparatory program. These types of teacher role changes were initiated in Finland more than 40 years ago. According to Tirri this level of teaching autonomy "requires a thorough knowledge of pedagogical content". As such

the aim of teacher education in Finland "is to educate pedagogically thinking teachers who can combine research findings about teaching with the profession's practical challenges" (Tirri, 2014, p. 603).

This acknowledgement of the complexity of the teaching profession in Finland begins with recruitment. Only one in ten Finnish applicants are accepted into ITE programmes. Applicants have to sit an entrance exam on assigned books on pedagogy as one of the steps to admittance (Sahlberg, 2014; Sahlberg & Hargreaves, 2011). The focus on pedagogy is backed up in the Finnish schools/universities which provide teacher education. In the 1970s and 1980s most professors in teacher education held qualifications in subjects other than education. Now most have it as their primary discipline. They also must all demonstrate pedagogical competence in order to work in teacher education (Tirri, 2014).

Although these are phenomenal challenges for ITE, and this study is only focussing on the clinical and the pedagogical, to the neglect of other formative concerns in the teacher preparation field, there are some saplings of hope emanating from pertinent research which suggests that holistic and integrated interventions can bring about pedagogical refinement in the understandings and enactments of ITE candidates (Brouwer & Korthagen, 2005; Kessels, 2001; Loughran, 2007; Sheridan, 2016). This type of research may be open to being criticised (Cochran-Smith & Zeichner, 2005) as it is often conducted by teacher educators with a personal stake in the programs under review. However, this study promotes the stance that collectively tackling these systemic issues in ITE, while acknowledging their complexity, is a more optimistic posture than ignoring them and hoping either, they will dissipate, or the demand for them will.

Current ITE Provision in Ireland

In this chapter, I have considered the curriculum change currently being enacted in Ireland and have critically presented Shulman's PCK concept as a potential pedagogical fertilising construct for calibrating with the principles of the contemporaneous

curriculum, and exploring the power of the affective domain in any process of calibration. This section introduces the *Initial* phase of teacher education in Ireland. This phase of the teacher education continuum is charged with commencing the preparation process and constructing firm foundations upon which the *Induction* and *In-career* phases can build upon.

ITE in Ireland is an all-graduate provision. There are consecutive and concurrent programmes on offer in fourteen institutions (Clarke & Killeavy, 2012), whose amalgamations into seven centres of excellence is in its final stages (Sahlberg & Hyland, 2019), with the concurrent programmes being more commonly employed with practical specialisms such as Home Economics, Physical Education and technological subjects. Since 2012, concurrent programmes must cover four years and consecutive programmes must be two years in duration, an increase of one year in both cases, from what was provisioned before (Teaching Council, 2011a). This extension in time provision has emanated from a realisation among academics, politicians and teacher educators of the complexity of practice that requires fostering during the period (Coolahan, 2007).

PSTs' time during these programmes is split between university and school sites. Some programmes incorporate block placements for sections of the term. Others opt for partial continuous placement for the academic year. There is an expectation that each candidate will experience at least two significantly different school sites over the course of their master's programme, a stipulation, it is hoped, that will challenge pre-service teachers during their developmental preparation (Coolahan, 2007; Council, 2013; Hall et al., 2018; Sahlberg, 2012). In all, each PST has a dedicated period of two years where they can engage with comprehensive theory and practice trial, error and reflection. They do this on a significantly reduced volume of class contact time; as little as 20% per week in comparison to their in-career colleagues. This reduced volume of teaching, when they are on placement, is contrived to allow the time for attending the HEI, engaging in planning, preparation and reflection, and conducting professional conversations with colleagues and teacher educators.

The University based component consists of two main parts. These are the foundation disciplines and professional studies. The foundation disciplines are *Philosophy*, *Sociology, Psychology* and *History of Education*. The professional studies include methods lectures/workshops and professional tutorials. These elements of the course are normally conducted in smaller class groups in comparison to the foundation disciplines. Since 2012, teacher education programmes have introduced an increased focus on ICT skills, numeracy, literacy, inclusivity and development education (Teaching Council, 2011a).

In terms of a national approach to ITE, the nascent Director of the Teaching Council, the regulatory body for the teacher education continuum, clearly stated that "professional accreditation for any profession is a judgement as to whether a programme prepares one for entry into that profession" and that graduates of ITE programmes "should achieve programme aims and learning outcomes which are aligned with the values and professional dispositions and standards of teaching, knowledge, skill and competence which are central to the practice of teaching" (Lawlor, 2009, p. 11). This strong statement suggested that the Teaching Council's vision of teacher education was of a robust process, aligned with the envisaged classroom practices, which would experience an increased regulation and oversight, in comparison to more autonomous HEI procedures that had existed before (Conway et al., 2009). This statement reflected a European view that teachers "should, therefore, be able to reflect on the processes of learning and teaching through an ongoing engagement with subject knowledge, curriculum content, pedagogy, innovation, research, and the social and cultural dimensions of education" (Europea, 2005, p. 1).

The Teaching Council further elaborated that, in order to acknowledge the complexity of pedagogy within the structure of ITE, "the profession's complex theory/practice inter-relationship should be made explicit" (Teaching Council, 2011a, p. 12) by interweaving foundation studies, professional studies and the school placement. It was strongly promoted that this integration would happen consistently with all ITE agents and in all ITE settings sharing a common language, purpose and practice (Hogan, 2011). This is a laudable ideology. However, according to two of the seminal commentators in

the discipline, ITE programmes that aim for this powerful integrated learning would need to be both highly intellectual and deeply clinical (Darling-Hammond, 2017; Pasi Sahlberg, 2012). Although long called for by successive reports (Byrne, 2002; Coolahan, 2007; Hall et al., 2018; Pasi Sahlberg, 2012; Sahlberg & Hyland, 2019), the idealised integrated communication/practice mechanisms between the university and school sites in Ireland has not yet fully developed to what was envisaged, nearly ten years after the publications of the first Teaching Council ITE policy framework.

Developing PCK in Initial Teacher Education

This review's outline of the sought pedagogical understanding and enactment defined by the 2012 PCK framework (figure 3.5), and the consideration of the importance of belief and values amplifiers, hints towards a useful theoretical structure to comprehend how HEIs may continue their progression with pedagogical preparation in ITE. If the current generation of Irish curricular and teaching practice policy seeks to prepare pedagogically adaptive and fluid teaching practitioners who can interrogate curriculum, and as a result, devise and resource stimulating experiences for young learners, then the literature suggests that transmission ITE programmes, which exclusively focus on the *technological* and the *practical* orientations, will not suffice (Deng & Gopinathan, 2003). These critics of *technological/practical* style teacher preparation programmes suggest that when the *technological* dominates the experience of the pre-service teacher, there is a worrying threat of them exp02ieriencing a 'conceptual blight', (Deng & Gopinathan, 2003).

Shulman was acutely aware that the pedagogical capacities, required from pre-service and in-career practitioners, to adopt his PCK concept authentically, were considerable. If his concept was to be authentically and meaningfully established and entrenched within teacher education, it required extensive collaboration between the providing agents and sites. He believed that it would require five years of higher education engagement to successfully enact this style of pedagogy with a PST, a figure agreed with in practice by Finland contemporaneously (Shulman, 1986; Tirri, 2014). He emphasises the importance of ITE students having a command of subject content

(*Propositional Knowledge*), curricular content (*Strategic Knowledge*) and subject pedagogical content knowledge (*Case Knowledge*). Propositional knowledge on its own, in Shulman's opinion, is not enough. Case knowledge focusses on the pitfalls for learners in engaging with core themes, topics and concepts of a particular subject. He suggested that teacher education also needs case (clinical) knowledge; specific, well-documented and richly described events, where teachers are exposed, like lawyers, to such exemplars that enable them to build towards principles of effective practice (Shulman, 1986). This is a key location for the facilitation of theory and practice and subject discipline knowledge and pedagogical adeptness.

Shulman, and others since, wanted teacher education to develop carefully chosen subject matter that emphasizes the reasoning and 'meanings and connections' (syntactic) specific to each discipline (Cohen & Ball, 1999; Darling-Hammond, 2006; Floden & Meniketti, 2009; Shulman, 1986; Slekar & Haefner, 2010), preparing the practitioner to not only be the master of procedure, but also of content and rationale. Their hope was that with the careful selection of disciplinary scenario content, a PST would slowly begin to acknowledge and appreciate the complexity of the syntactic and the substantive domains within their subject's discipline and the sophisticated decisions made by teachers both before and during practice. ITE, which facilitates complex clinical reasoning through the orchestration of learning experiences, such as 'approximations of practice' (Grossman et al., 2009), has the potential to be a *transformative* preparatory force, (Deng & Gopinathan, 2003).

One of the most successful PCK enactment constructs for ITE are Content Representation (CoRe) and Pedagogical and Professional Experience Repertoires (PaP-eRs). These are tools, devised by Loughran and his team to uncover, document and portray teachers' PCK. Loughran wanted the *CoRes* and *Pap-eRs* to act as a sort of heuristic device to enable pre-service teachers to gain insight into the complexity of teaching through practice and reflection as opposed to just through theoretical transmission (Loughran, Mulhall, et al., 2008). The creators claim that both mechanisms work on 'concretizing PCK' (Bertram & Loughran, 2012, p. 1028). The CoRe template can be used as a prompting tool to encourage an individual, or group of

teachers, to consider the larger concepts and ideas contained within a specific area of discipline content. It is suggested that once the ideas/concepts have been revealed, the teacher(s) then devise framing questions or prompts which assist the learners to realise the underpinning complexity of the area of study (Bertram & Loughran, 2012). The same research heralds the PaPeRs tool as a means to reflect on, and unpack, a teacher's thinking in a specific lesson feeding forward to future practice (Bertram & Loughran, 2012).

IMPORTANT SCIENCE IDEAS/CONCEPTS			
	Big idea 1	Big idea 2	etc
1. What you intend the students to learn about this idea?			
2. Why it is important for the students to know this?			
3. What else you might know about this idea (that you do not intend students to know yet)?			
4. Difficulties/limitations connected with teaching this idea.			
5. Knowledge about students' thinking which influences your teaching of this idea.			
6. Other factors that influence your teaching of this idea.			
7. Teaching procedures (and particular reasons for using these to engage with this idea).			
8. Specific ways of ascertaining students' understanding or confusion around this idea (include likely range of responses).			

Figure 3.6 CoRe Framework (Loughran et al., 2012)

Working with Science teachers, Loughran drew on the collective (CoRes) and formerly tacit PCK conceptualizations of expert teachers in order to manufacture his framework design. This made explicit the aspects of teaching and learning that those expert teachers focused on pedagogically. It encouraged developing teachers to consider the following for each content area during planning and preparation periods:

- Purpose
- Significance
- Learner unknowns/Potential Misconceptions
- Frames/templates for assisting learner understanding
- Pedagogical challenges
- Student capacity and competence
- Pedagogical creativity

- Questioning and assessment strategies

Loughran's fieldwork was thorough, involving two years of engagement with fifty teachers. Its findings claimed that many of the 'expert' teachers who displayed PCK expertise did not have the language to articulate, or experience of communicating this knowledge (Loughran et al., 2004). The findings also clearly point to the importance of an approach to understanding and practice which prioritises in-depth content knowledge, discipline specific conceptual understanding, discipline structure, learning strategies, purpose, and learner misconceptions as key skills and strategies used by PCK adept practitioners (Loughran et al., 2004). These pedagogical considerations, represented in the CoRe tool have been integrated into the investigative focus framework devised to initiate the policy and the portfolio analysis in this study. This integration is further explained in the Policy Analysis chapter of this study.

Loughran's supporting reflective tool for CoRes is called a PaP-eR. A PaP-eR is a narrative reflective piece by an individual teacher dedicated to explaining how facilitating the learning of a content/concept area would look in their own classroom. It aims to illustrate PCK in action and to unpack the individual teacher's pedagogical reasoning for their particular classroom practice. It takes into account the individual teacher's pedagogical style, the learning context and the experience of the learner. It is a flexible construct which is altered for each and every learning situation, influenced by the content/concept which is being engaged with (Loughran et al., 2012; Loughran et al., 2004). The combination of Loughran's enactment work, together with the revised 2012 PCK model *Table 3.5*, influenced the following construction presented shortly, which acted as the lens by which the initial policy analysis was conducted.

Potential Inhibitors to HEI PCK Enactment

Shulman also stresses the importance of the PST's content knowledge in the teacher preparation process. In his opinion if the teaching practitioner does not have mastery

of the content, it is more likely that they will slip into a traditional lecture style and miss the opportunities to transform the content into these deeper disciplinary learning opportunities. He calls it the "pedagogical price that is paid" when the teacher's content knowledge is compromised (Shulman, 1986, p. 8). Shulman describes the looked for change, as moving from "didactic strictly controlled recitation" (Shulman, 1987, p. 18) to reasoned practice which is an "outrageously complex activity" (Shulman, 1987, p. 11). Authentic enactment involves teacher educators and PSTs interrogating the complex and abstract knowledge within subject disciplines, as well as the concrete and explicit, so that pre-service practitioners would be less likely to avoid those disciplinary topics and/or brush over them vaguely or vacuously.

He emphasised that contemporary research publications on effective teaching tended to concentrate on the teaching of skills more than it focussed on effective teaching of abstract capacities such as critical interpretation. Conceiving frameworks to facilitate the concrete learning of a subject discipline seemed more manageable for teacher educators than creating similar structures for the abstract knowledge contained within the individual subject discipline (Shulman, 1987). For example, history graduates know and understand historical periods, but can they transform the learning of history's principles and fundamentals into adaptable pedagogically powerful forms which can initiate and unveil the learning journey effectively for a novice learner? (Shulman, 1986). Creating powerful learning experiences for PSTs purposed with inducing them into these more sophisticated pedagogical problems was the style of teacher preparation that Shulman advocated for.

Shulman's ideal teacher preparation programme, which he believed can support authentic engendering of PCK understanding and practice, is HEI-based with a complex interplay between theory and practice. This vision has been strongly contested in the field of teacher education over the last three decades specifically. The teacher preparation location debate of Ireland's near neighbours, following the influence of the Hillgate Group, Tory and New Labour governments, is well documented (Ball, 2013; Czerniawski & Menter, 2018; Philpott, 2014). Governments that believe that teachers are there to 'deliver' the curriculum, in a top-down system, tend to also promote a

behavioural apprenticeship model of teacher preparation. This is premised on new entrants observing and mimicking in-career practitioners. This over-reliance on the *practical* suggests a simplistic interpretation of the complex act of teaching. Assuming that an apprenticeship model will unveil the complexities of the profession across disciplines such as the pedagogical, the psychological and the sociological has been deemed fallacious by commentators (Ball, 2013; Czerniawski & Menter, 2018; Snoek & Žogla, 2008). They suggest it is more likely to encourage 'reflexive conservatism' (Lortie, 1975, p. 230) or the uncritical 'mimetic', (Jackson, 1986).

These critics of apprenticeship in-school styles of teacher preparation do proffer alternatives. Jackson's ITE proposal, in his analogue of the 'mimetic', and Deng's ITE conceptualisation of a 'third way' are both coined as the *transformative* format of teacher preparation (Deng & Gopinathan, 2003; Jackson, 1986). According to its proponents, *Transformative* teacher education does not exclusively focus on the *technical* or the *practical* but genuinely acknowledges the complexity of practice that the phase is looking to promote. It also acknowledges the power of the affective domain that could potentially require challenging if this practice transformation is to be effectively initiated (Deng & Gopinathan, 2003; Jackson, 1986). It is further propounded that a *transformative* conceptual orientation of a teacher education programme is specifically crucial in the context where there is paradigmatic change sought to a well-established status quo of practice (Darling-Hammond, 2017; Darling-Hammond et al., 2019; Deng & Gopinathan, 2003; Korthagen, 2017a; Loughran & Hamilton, 2016).

Ireland is currently attempting this significant curricular shift, many years after Singapore, the jurisdiction about which Deng wrote about two decades ago. The Singaporean Education Minister, at the time of their curricular change (2002) stated that pre-service teacher preparation had to focus on disrupting teachers' traditional role as "a middleman handing down a static body of knowledge' to the role as "an inspirer who could instil in his students an unquenchable thirst for knowledge and expose them to the art and technique of acquiring new knowledge" in Deng & Gopinathan (2003, p. 55). In agreement with this, Loughran argued that teacher

education should create an environment which supports a development of understandings and approaches to teaching that challenge 'telling as teaching' and 'listening as learning' (Loughran & Hamilton, 2016). However, these affectively disruptive stimuli in teacher education, which aim to cause dissonance, have already been claimed to be extremely challenging in the wider literature (Darling-Hammond, 2017; Darling-Hammond et al., 2019; NCCA, 2019; Sahlberg, 2012; Sahlberg & Hyland, 2019; Tirri, 2014).

Further to the challenging nature of dissonance facilitation for PSTs, one must also consider the current contextual landscape. If this claimed pedagogically fertile *transformative* environment for ITE were holistically enacted in Ireland, it may disrupt many current practices, contexts, and strategies in HEIs. These might include some programmes' tendencies to 'frontload' PSTs through lectures, or question a requirement to separate foundation disciplines and methodological preparation (Loughran & Hamilton, 2016).

The PCK framework for this study as outlined in Figure 3.5 incorporates the significant features of the literature review. It offers a construct through which the naming of the specialist knowledge of teachers also reflects the complexity of teaching practice (Loughran & Hamilton, 2016). It acknowledges the importance of the affective amplifiers in teacher education which have buttressed Shulman's original PCK framework. The fusion of the beliefs and values work, combined with the gradual unveiling of the iterative complexity of the theoretical and the practical, is, I argue, what construes the transformative conceptual orientation of a teacher education programme. This ITE PCK development theory can translate practically into practices such as: collaborative examination of student work, video analysis, action research, collaborative lesson planning and enactment and structures for complex analysis and reflection on action (van Driel & Berry, 2017). Considering this potential for deep clinical reasoning and reflection in ITE, this study is consequently, in agreement with Shulman, "we are inspired by teacher education's range and not its median, which mindless accountants believe can be technically measured" (Shulman, 2007, p. 560).

This short section concluded a larger focus on teacher education both internationally and in Ireland. In respect of teacher educators, the section attempted to authentically represent the immense challenges that face HEIs as they attempt to challenge and prepare PST candidates pedagogically. Importantly, it needs to be acknowledged that this study is only concerned with this one, of many preparatory challenges, which ITE is charged with overcoming. One of the key tools used to support this is the portfolio. This next and final review section provides a critical overview of the literature on portfolios in ITE. The portfolio provides a key data source in this project in terms of understanding pedagogical thinking and understanding.

Portfolios: A scholar's window?

Introduction

The previous section highlighted the importance of reflection in any reconceived transformative programme of ITE. Reflection in multiple forms has been promoted by many of the seminal authors in the fields of pedagogical development and teacher education (Brookfield, 2017; Cochran-Smith & Lytle, 1999a; Driessen, 2017; Grossman et al., 2009; Korthagen et al., 2013; Schön, 1983; Shulman, 1998). One of the main mechanisms employed to promote reflective learning in ITE in Ireland is the professional reflective portfolio. Portfolios are mainly employed for "learning" and "credential" purposes in Ireland's domestic context (Zeichner & Wray, 2001). This means that they are used to stimulate professional conversations between the student teacher and the teacher educator in pre- and post-lesson meetings, and that they are used for assessment purposes at the end of the year's final semester. This study will argue that portfolios, when integrated, purposeful, comprehensive and mentored (Driessen, 2017; Korthagen, 2016), can be an effective vehicle for the deep clinical reflection required for reasoned, discerning and adaptive pedagogical formation.

The Potential of Reflection in PCK

John Loughran considered reflection as “the purposeful deliberate act of inquiry into one’s thoughts and actions” (1996, p. 21). PST’s reflective portfolios are a significant method designed to ideologically facilitate deep reflective learning opportunities, which consider the practical and the theoretical in teacher education programmes (Darling-Hammond & Snyder, 2000; Driessen, 2017; Fox et al., 2015). This study has been designed epistemologically and methodologically to reflect this. Philosophical researchers in the field of education describe the knowledge spectrum using alternative language; professional and practice knowledge (Wenger-Trayner et al., 2014), theoretical knowledge and practice knowledge (Shulman, 1986), formal and practical knowledge (Fenstermacher, 1994), practice and research (McIntyre, 2005) knowledge for, in and of practice (Cochran-Smith & Lytle, 1999a). Each of their spectrums highlight the importance of synthesising the divergent. Deciphering and translating language and knowledge from both extremes of the spectrum acknowledges the richness that both have to offer. However, providing the conditions within which complex synergies can be formed through practice, reflection on practice, and probing questions from coaches is a stubbornly challenging objective to achieve (Zeichner, 2010). This is where the communicated purpose and the ongoing coaching for authentic and effective portfolios is considered crucial.

The levels of reflection visible in PST’s portfolios have been observed to range from the low level, focussing on the descriptive, to the high level whereby considerations of macro dimensions, such as ethics of teaching practice, are engaged with (Gelfuso & Dennis, 2014; Gelfuso et al., 2015). These higher end ‘productive’ reflections present as flexible to allow for different perspectives and positions, challenging the PST’s affective domain, (beliefs and values) as discussed earlier in this chapter (Hoy et al., 2006). The sought higher end productive interactions also include examples of PST’s questioning personally held assumptions and integration of theoretical (academic) knowledge (Hoy et al., 2006, p. 283). Much of the focus of this study in later chapters will be on the productive and high-level reflections that are visible in the sample portfolios.

Strengths and Weaknesses of Reflective Portfolios

This study acknowledges the assumptions and possible weaknesses of selecting portfolios as a window into the pedagogical understandings and practices of PSTs, and this will be addressed again in the methodology chapter. It opines that portfolios offer opportunities for professionals to engage in rich, deep and meaningful reflection integrating theory and practice in a reflective and iterative manner (Banks, 2004; Darling-Hammond, 2006; Schon, 1983; Shulman, 1998). They provide an opportunity to explore the developing pedagogical understanding and practice of PSTs as they navigate through and reflect on their initial efforts of preparing, planning and implanting learning experiences in the classroom. However, like other mediums and methods in education such as ICT integration, group work and peer assessment, the purpose and format of the method is all important. The extent to which the method is integrated authentically into the cycle of learning, in all strands and sites of the process, will have a significant impact on its meaningful usage.

The authenticity and validity of reflective portfolios, as an educational tool or as a research device, is strongly contended. Teachers' reflective portfolios have been in use since the 1980s and are supported, in some quarters, as a central tool in promoting reflective practice in the beginning teacher (Creswell, 2006; Kolb et al.; Loughran, 2013; Schön, 1983). However, they have also been described as a receptacle of a reality divorced from practice where PSTs collate bureaucratic jargon which they believe to be sought by policy makers and assessors alike (Wenger, 1998). At worst the PST engages in reflective performance management, focussing only on the positive aspects of practice (McGarr & O'Gallchóir, 2020).

Another piece of Irish research suggests that the 'survival dynamic', gaining classroom management and control and prioritising craft knowledge advocated by colleagues at their placement site all act as strong obstructions to meaningful engagement with the reflective portfolio as designed (McGarr & McCormack, 2014). Admittedly, this was a small study only exploring the work of a sample of six, but a PST preoccupation with these general pedagogical knowledges has been consistently suggested by findings for

many years (Hollingsworth, 1989). One might ask whether the thinking of McGarr et al would alter if the conceptual framework of ITE was reconstructed to prioritise the transformative? Would sequentially ordering university-based time to initially deal with general pedagogical management issues, escalating to more complex teacher pedagogical reasoning and decision making make a difference? If there were a shared developmental objective and composition with the practice site, would these early career concerns continue to dominate to the same extent?

Portfolios have been an integral part of medical education for a quarter of a century (Driessen & van Tartwijk, 2018). In that period, they have been adopted, challenged, reformed and consolidated. The experience of medical educators suggests that unless the portfolio is comprehensive and integrated into all aspects of the learning process, its usefulness is questionable. Without careful attention to purpose and format, and without constant mentoring, it is opined they are unlikely to be effective (Driessen, 2017; Snadden et al., 1996; Thomas, 1998). Making provision for the cultivation of complex synergistic reasoning and discernment in novice adult learners, is notoriously difficult. The medical profession has invested significantly in the development of structures and metrics, which can both explicate tacit practice, while maintaining complexity and situational contextuality. *Entrustable Professional Activities* (EPAs) are one such format which are experiencing a trial programme for medical interns and could potentially inform the augmentation of the portfolio based learning structures in ITE (Byrne et al., 2018).

A detailed explanation as to why portfolio analysis was chosen as the central data collection methodology is explained in Chapter 5.

Conclusion

This chapter commenced by describing the curricular landscape currently employed at lower secondary level and argued that Ireland's specific 'interpretation' can be positively appreciated. If the principles of learning outcomes curricula are respected,

and the construct protects against simplistic instrumentalist accountability mechanisms, then these frameworks can explicate hidden learning and encourage pedagogical practice development through professional collaborative conversations and explorations.

The transformative process from subject specific content matter to the content of instruction is opined as the 'black box' of Irish teachers' practice. As a consequence, the primary investigative focus of this study employs a compound of PCK influenced constructs. Together with understanding the learners' capacity for, and perspective in relation to the learning, this study places pedagogical understanding and competence practices centrally in the work concerns of teachers. The revised 2012 PCK model has emerged from decades of contention and has gained the collective support of those researchers and teacher educators who advocate for PCK principles. This integrated PCK theory and practice compound will be further explored in the Methodology Chapter.

Critics, such as Segall's *Critical Pedagogy* and Deng's *Curriculum Development* concerns, were challenged by the words and actions of Shulman and other PCK advocates. It was contended that Shulman created the PCK construct in opposition to simplified top-down accountability mechanisms and that his creation promotes classroom practitioners, who have curriculum knowledge, but who do not aim to usurp the role of the curriculum developer. He also advocates for teacher education which promotes critical pedagogical reasoning on prescribed curricular content.

The inclusion of teachers' beliefs acknowledged the gate keeper status of PST's established beliefs when it comes to learning to teach and the continuation of learning to learn. Furthermore, pertinent research suggests that personal belief constructs are notoriously difficult to disrupt, and it is unstable ethical ground for teacher preparation institutions to operate upon. Therefore, opportunities for creating dissonance for certain dispositions displayed by teacher applicants, both before acceptance on to the programme, and during the *Initial* phase of the continuum, offered another lens with which to reflect on PCK.

Applicants to Irish post-primary ITE programmes, on average, spend 50% of their time in Irish schools. This review pivoted to explore the existing pedagogical landscape that PSTs are likely to encounter during their placement. Irish teachers are held in high regard nationally and internationally. However, research suggests that they can be described as pedagogically conservative.

Subsequently, this review explored the international perspective on the role of the ITE phase in stimulating significant practitioner role and responsibility change in applicants to teacher preparation courses. A review of this area has resulted in a strong suggestion that this phase of the teacher education continuum is crucial in the habitus-forming process for new teachers. A stark warning, founded on one country's experience of fostering pedagogical awareness and adaptability in teachers, on the complexity of this process and advice on the need for deeply clinical and integrated site and theoretical practice opportunities for the enactment of pedagogy within ITE provision, has also emerged.

Shulman acknowledges the complexity of the task to authentically enable pre-service teachers to enact the principles of PCK. This review explored types of ITE, championed by contributors to the field, which they suggest might be successful in this enablement process. Transformative programmes which reject the technical and the practical style of 'front-loading' and transmission practices dominated the review. It is claimed these transformative style programmes can integrate cognitive and affective dissonance into their provision. Pedagogically their focus is on the clinical, and reasoned practice.

The chapter concluded with a critical review of the field's opinion on reflective portfolios. The integrated theory with practice nature of their mentored reflections, and the timespan of those reflections, are both suggested as pivotal factors in effective portfolios according to advocates who suggest that they can be a vista on the reasoning and practice of the PST, "the neophyte's stumble becomes the scholar's window" (Shulman, 1987, p. 4). However, this chapter has also acknowledged that these documents will need careful analysis and corroborative triangulation, by this study, if they are to be accepted as authentic and valid data.

The thesis now moves to an analysis of the pertinent Irish policies through the employment of a PCK influenced investigative focus.

Chapter 4: Analysing the Policy Landscape

Purpose of the Policy Analysis

At a time in Ireland where there has been a significant curricular pivot from a classical humanist focussed approach (Gleeson et al., 2020) to one that is learner centred, constructivist influenced, and less centrally micro-managed in relation to the selected processes for learning, this study contends that it is opportune and relevant to conduct an explorative study into pedagogical understanding and practice. It is a particularly timely study when the researcher's personal pedagogical journey, as outlined in Chapter 1, suggested that this particular role 'pivot' is onerous and challenging for practitioners. This chapter analyses the pedagogical practice and knowledge

conceptualised in the most recent suite of published policies which target lower-secondary learning and teaching, and outlines what is asked of Irish teachers? It does this through a *thematic/document analysis* of relevant public policy which articulates the pedagogical expectations and practices expected by policy of the Irish teaching profession working at that level. The investigative focus foregrounds the PCK influenced pedagogical themes to which the policy documents are committed through a systematic analysis and synthesis of connected elements across policies. This process aims to provide an answer to the first of my research questions outlined in Chapter 2.

This policy exploration also affords this study the opportunity to investigate the extent to which the relevant documents reflect the political and academic pedagogical observations and concerns, of the previous four decades in Ireland, which were explored in the previous chapter. These observations and concerns put forward the position that there was a dominant pedagogical conservatism at hold in Ireland's teaching profession, one abetted systemically. The contextual aspect of the investigation is important for this study because it has the potential to corroborate the suggestions from research that systemic concerns about pedagogical conservatism were a significant driver of this curriculum change. Finally, the analysis process affords this study an opportunity to assess whether there is a shared pedagogical understanding between the policies published by the three pertinent agencies, in terms of philosophy, definitions, and in the means by which the outcomes are to be achieved? This is a worthy consideration because, as the previous chapter's review demonstrated, this is a contentious field and there is no guarantee of congruence between separate policy producing agents and agencies..

Selecting the relevant policies

As described earlier, this study posits that PCK can be an influential tool, for promoting pedagogically rich understanding and practice, especially with pre-service teachers. It is therefore important to assess whether there is a pedagogical congruence between the sought pedagogical capacities looked for by policy and the pedagogical principles of PCK. With the objective of gaining a deeper understanding of how PCK influenced

pedagogical knowledge is understood in the relevant policy documents, the following publications were selected for analysis. They were chosen based on the following selection criteria: 1. They were published during the designated period; 2. They are actively being used by teaching practitioners at lower secondary level in Ireland. 3. They are consistently referred to by the DES in Circulars and by the *Inspectorate* in their inspection processes.

- *A Framework for Junior Cycle* (NCCA 2015)
- *Looking at our Schools 2016-2020* (LAOS) (DES Inspectorate 2016)
- *School Self-Evaluation Quality Framework* (DES Inspectorate 2016)
- *A Guide to Inspection in Post-Primary Schools* (DES Inspectorate 2016)
- *Cosán: Framework for Teachers' Learning* (Council, 2016a)
- *Code of Professional Conduct for Teachers* (2nd edition revised) (Council, 2016b)

The Teaching Council's *Professional Code of Conduct* (Council, 2016b) and *Cosán* (In-service professional learning) (Council, 2016a) outline the Teaching Council's regulatory expectation of professional standards in teaching and professional development. The role of the Teaching Council is to promote and regulate the profession for the good of the profession and the public at large (Ireland, 2001). Sixteen of its thirty seven council members are either nominated, or elected by, teachers, with the rest made up of teacher educators, industry representatives, managerial appointees and ministerial appointees (Gleeson et al., 2020; O'Donoghue et al., 2017).

The *Framework for Junior Cycle* outlines the NCCA's principles and rationale for lower secondary education (DES, 2015). The *NCCA* is an advisory body to the DES with the remit to explore and research curricular and assessment theory, at home and abroad, so that it can identify appropriate reforms and recommend them to the DES (Halbert & MacPhail, 2010). Its members represent the education partners across the system including teacher unions, management bodies and representatives from industry.

The DES is responsible to the Minister of Education and its key role is implementing and evaluating curriculum (Gleeson et al., 2020). The LAOS publication, from the *DES,* and the *School Self Evaluation* (SSE) documents from the Inspectorate, articulate a comprehensive framework of professional standards to further explicate what they suggest highly effective and effective teaching practice looks like (Education, 2016; D. Inspectorate, 2016; D. o. E. Inspectorate, 2016). The outcomes for learners and teachers alike are supposed to provide direction and purpose, but not to prescribe explicit means by which the objective is achieved. The expectation is that local educational institutions will selectively interpret, mediate and create according to their contextual needs (Inspectorate, 2016; D. o. E. Inspectorate, 2016). The SSE guidelines explain how schools can employ the standards for internal improvement efforts. *A Guide to Inspection in Post-Primary Schools* explains how the Inspectorate employ the standards during external evaluation processes. According to the DES, SSE and external evaluation are complementary processes, both focussing on improvement (DES, 2016; D. Inspectorate, 2016).

Byways and crossroads: the policy journey to now.

Policies and frameworks do not tend to emerge from a vacuum. This section explores an interpretation of the policy formation journey. It includes agents and agencies, both national and international, who may have influenced the current curricular policy landscape in Ireland. A *thematic/document analysis* approach was selected over some other potential policy analysis models such as *Critical Historiography* (Gale, 2001), or a *Systems* approach (Banathy & Jenlink, 2003). However, the influence of authors such as Gale and Banathy in the contextualisation of any policy analysis can clearly be seen below. The reason for adopting a more 'determined form of analysis' (Banathy, 1995) is that the purpose and scope of this study does not allow for a critical discourse on the merits of, or power interwoven in, the current generation of polices. This study concentrates on practice, and the realities of everyday teaching work and the preparation for that work.

The current curriculum structure, promoted by public policy in Ireland, has been described as a learner centred constructivist influenced curriculum which broadly outlines desired learning outcomes (Gleeson et al., 2020). This places it in opposition to previous objectivist or behaviourist curriculum orientations (Crotty, 1998; Yilmaz, 2008). This study will suggest that the dominant policies of this curricular era have been influenced by historical, national and international experience. The principles underpinning the current curricular direction for lower secondary education in Ireland are neither innovative nor new. Internationally, similar learner focussed curricular orientations can be traced back to seminal thinkers such as (Dewey & Small, 1897; James, 1906). Their influence could in turn be seen influencing the mid to late twentieth century work of Brophy (2010), Sizer (Sizer, 2004), Bruner (1996) and Shulman (1986). They largely look to put the learner at the centre of the learning process and to critically challenge the concept that 'listening is learning' and 'telling is teaching'.

Moreover, internally in Ireland, prior to the period when these policies were published, there is evidence of fifty years of repeated public policy calls for learner-centred learning and teaching practices. From the texts of the 1971 *Primary Curriculum*, through the *Intermediate Certificate Examination Reform Report* (1975), to the *White Paper on Educational Development* (1980) which saw the *Irish National Teachers' Organisation* (INTO) call for teachers' roles to change dramatically to "teaching children *how* to learn instead of just *what* to learn" (Committee, 1980). The period of *Inter Cert*, and its 1988 overhaul to *Junior Certificate*, witnessed consistent calls for new kinds of learning which promoted "creativity, enterprise and innovation more than conformity and passive learning" (Coolahan et al., 2017, p. 27).

It has been suggested that the OECD has had the greatest international influence on Ireland's education system over the last half a century (O'Doherty, 2014). During their formal visit in 1991, they issued calls for practice in line with learner-centred formats of learning. They promoted a concept of a teaching 'profession' which was complex in nature to facilitate this (OECD, 1991). However, while encouraging these practices, they echoed the INTO's pedagogical concerns with indigenous teaching practice, which

they referred to as a "transmission and traditional pedagogical style" (OECD, 1991, pp. 54,55). The visiting delegation clearly articulated a pedagogical hope that "initiative, independence of thought, practical skills, problem solving and cognitive strategies become central rather than marginal as they often are at present" (OECD, 1991, p. 74).

During the final decade of the last millennium the complexity of teaching's professional practice was explored academically and through public policy. This period witnessed contention on that practice, relating to a perceived neoliberal performativity and evaluative preoccupation with the role of the teacher by the political class (Gleeson & Donnabháin, 2009). The *Green Paper* (Government of, 1992), the Education Convention (Coolahan, 1994), the *White Paper* (Education, 1995) and *Charting Our Education Future* exemplified further confusion and equivocation as to the role of the teacher. During the period the descriptions of the role of a teacher varied significantly in the published policy documents from "complex with the need for radical adaptability" in the *Green Paper* (Government of, 1992) to one with the "onerous responsibility of imparting knowledge" in the *White Paper on Education* (Education, 1995).

The *Report on the Establishment of a Teaching Council* (Education, 1998) led to a significant shift by DES from the *1995 White Paper.* In this report, it aspired to a vision of the teaching profession that would establish the teacher as a

> [S]killed practitioner in the science and art of teaching, who applies professional knowledge, personal intuition, creativity and improvisation to accomplish teaching tasks; as problem solving and decision making clinician; as curriculum maker, researcher, evaluator, and reflective practitioner; and finally as a significant other person who exercises considerable moral influence" (Science, 1998).

The statement firmly distinguished the role of the teacher from that described in the *1995 White Paper*. No longer were teaching professionals charged "with onerous responsibility for imparting knowledge" (Education, 1995). The report quotes Shulman and his influence on describing the role of teachers as being more complex, and cognitively demanding, than that of doctors, where they are constant "dilemma managers", (Education, 1998, p. 6).

Like in the previous decade, the approach to learning in Irish schools in the opening years of the new millennium was criticised for both its managerial and traditional style. “Knowledge is sacrificed to information and understanding is sacrificed to knowledge” (Byrne, 2002, p. 20). The ESRI’s longitudinal research, conducted at that time, generated both quantitative and qualitative data of the lived experience of the lower secondary student in Ireland (Smyth et al., 2007; Smyth et al., 2006; Smyth et al., 2004). The findings strongly corroborated the *Byrne Report* with students experiencing disengagement, allegedly affected by a strong focus on exam preparation and an absence of diversity in teaching methods (Smyth, 2009).

Since the conclusion of the ESRI research, there has been a consistent stream of academic publications which support aspects of the depiction of learners’ experience by Smyth et al (Burns et al., 2018; Gleeson et al., 2020; Hislop, 2011, 2013; Shiel et al., 2009; Áingléis & Looney, 2018). Ireland’s teaching profession’s “prevailing pedagogy based on content knowledge transmission rather than student-centric learning outcomes” is firmly established and is recognised domestically and internationally (Gleeson et al., 2020). Sharing this concern with the kinds of dominant pedagogical approaches in schools, and the need to transform these, has been the position of the *Teaching Council* since its statutory formation in 2006. The Council has been persistent in its aim to design a policy framework to support the professional education and practice of teachers. A considerable period lasting a decade has already been committed to getting the policy structures in place with which to support this (Coolahan, 2007; Teaching Council, 2011a, 2011b, 2011c; Council, 2012, 2016a, 2020a; Darmody & Smyth, 2016; Hall et al., 2018; Lawlor, 2009; Sahlberg, 2012).

This critical review of the journey to this era of curricular policy is presented to corroborate the suggestion that there has been a consistent call for fundamental pedagogical practice change in Ireland over the last fifty years. The call has been influenced by internal and external agencies. This study acknowledges that the influence of foreign direct investment, the knowledge economy and economically focussed international agencies can be said to be contributing to this agenda, but for

the purposes of this work, the interest lies in the pedagogical disposition of the profession. Generally, the objective of the calls for reform have been cohesive in that they appeal for fundamental function changes in the traditional roles of learners and teachers in Ireland. This study is concerned with how that change was planned and how the plan is progressing?

PCK investigative Focus

The systematic framework for policy analysis in this chapter, and for the subsequent qualitative content analysis of portfolios, described later, is informed initially by the *Shared expanded model of PCK 2012* (Figure 3.5). As explained above, this model is used to define and identify the theoretical factors that influence the development of PCK. This model is complemented by the *CoRes* (Figure 3.6), work of John Loughran (*Monash University, Australia*). The creation of CoRes contributed to a change of pedagogical teacher education discourse, from one of description of PCK to one that enabled the concept's practical integration (enactment) into the professional development of novice practitioners (Berry et al., 2008). Although, the *CoRes* tools were specifically designed for Science teachers, this study contends that the PCK fundamentals and principles can reasonably be, and have been, applied to other subject disciplines as well, (Jo & Bednarz, 2014; Krauss et al., 2008; Monte-Sano & Budano, 2013), and as such are an appropriate framework to a more general systemic policy analysis.

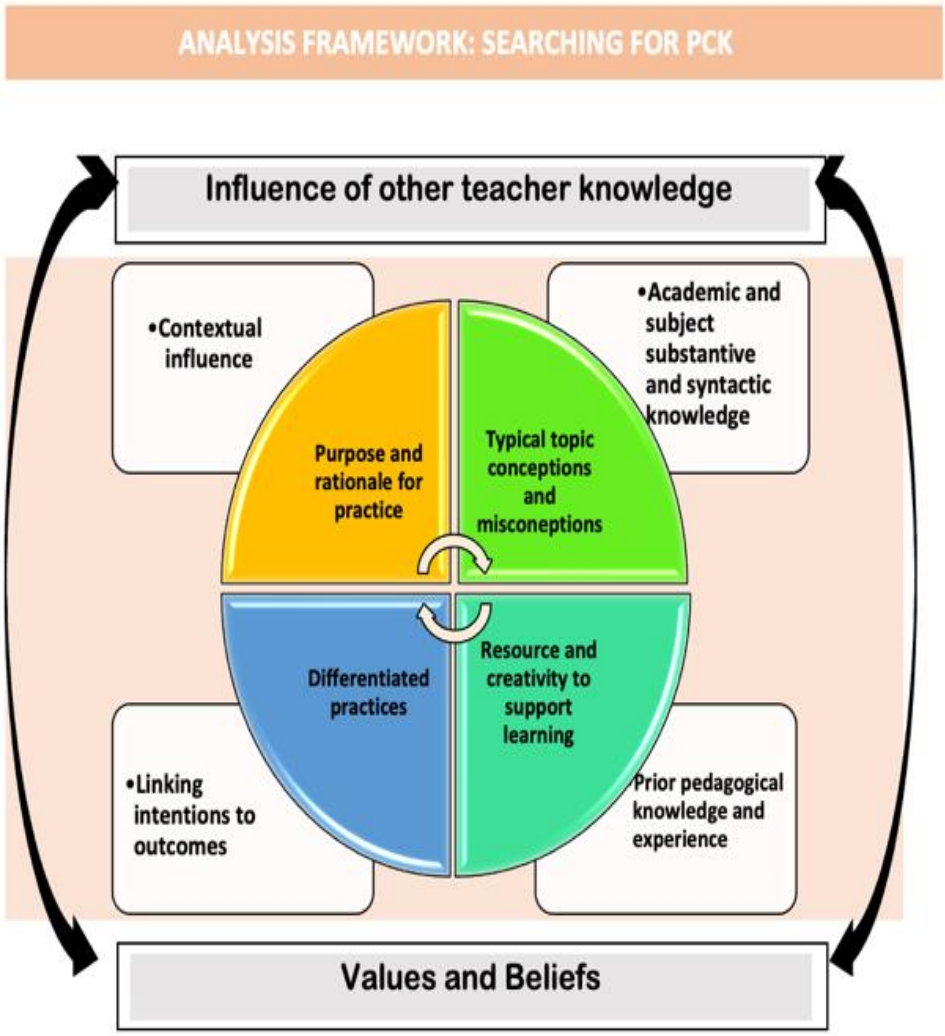


Figure 4.1 Interwoven2012 PCK and CoRe Investigative Focus, Dooley 2021

Figure 4.1 depicts the investigative focus adopted for the policy analysis. The investigative focus is formed by three distinct sections. It is framed, and all features are influenced, by the affective domain (Values and Beliefs) and the other teacher knowledges (Curricular, Contextual etc) which, according to Shulman (1987; 1986), are integrated with PCK. The considerations located in the lighter coloured boxes contain specific teacher pre-lesson deliberations which directly impact pedagogical considerations and reasoning (Loughran et al., 2004). They include prior observed experience, curriculum direction, specific context of place and person, and the navigation and interpretation processes for subject matter representation at the macro level.

The inner circle quadrants represent the micro level. They represent the *what?* level of teacher's practice after the process of theoretical reasoning on the *why?* and the *how?* They focus on the articulation of purpose and meaning for the learner, anticipation of common cognitive approaches and misconceptions and the preparation of suitable scaffolding resources to support the individual learners develop habits of mind and deep understanding of the subject discipline under exploration (Richardson, 2003). The three sections of this investigative focus provide the scope to perform a detailed exploration of the selected policies with the purpose of identifying PCK concerned features and aspects of them expressed therein. The purpose of this is to gain a deeper understanding of the pedagogical reasoning and capacities looked for from practitioners, as outlined by this generation of curricular and teacher role publications.

In order to record the findings from the selected policies the table depicted below, at figure 4.2, was constructed. This table acted as an initial deductive lens to reveal the pedagogical focus of the policies. It specifically sought references concurrent with the features and principles of Figure 4.1, which related to how general pedagogical knowledge, and specifically PCK, had been defined by Shulman and colleagues, and enacted by Loughran and colleagues. Its construction, with three columns independently aligned to the individual agencies, was also influenced by its ability to facilitate cross-referencing when analysing the extent to which the different actors and agencies aligned their sought pedagogical practice across the different policy publications which they produced.

Policy Pedagogical Competence	Looking at our Schools 2016 A guide to Inspection for Post Primary Schools 2016 School Self-Evaluation Guidelines 2016-2020	Code of Professional Conduct	Framework for Junior Cycle *Most descriptors are learner centric*	Cosan (Pathways) In-service CPD Teaching Council
General Pedagogical stance				
Subject discipline conceptual understanding. Traditional beliefs and misconceptions				
Creating supportive learning rubrics and templates				
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning				
Consistent reflection and reasoning on and in practice. Consideration of learner's prior learning, capacity, context and competence				

Figure 4.2: Initial Policy Analysis Framework, Dooley 2021

The analysis and extraction process:

Thematic/Document Analysis is a systematic procedure for reviewing or evaluating documents, such as policies or curriculum documents. As a research method, document analysis is particularly applicable to qualitative case studies (Bowen, 2009). In all qualitative analyses "their strength is built upon the description and rationale of the analytical procedures employed" (Bowen, 2009, p. 27). The analytic procedure

employed entails finding, selecting, appraising, and synthesising pertinent data contained in the documents with the purpose of producing themes as an outcome (Vaismoradi et al., 2016).

This policy analysis process commenced with an initial skimmed reading of the selected documents employing the deductive framework, **Table 4.1** (Bowen, 2009; Hsieh & Shannon, 2005). This opening reading employed the compounded PCK investigative focus construct to filter for meaning units (relevant passages or occurrences) in the text (Bowen, 2009; Erlingsson & Brysiewicz, 2017; Ryan & Bernard, 2003). This is in keeping with the principles of document/thematic analyses' mixed procedure of category development. It begins with a deductive framework, emanating from a comprehensive theoretical exploration, which is connected to the purpose of the study, was employed (Cho & Lee, 2014; Mayring, 2014; Ryan & Bernard, 2003). As the analysis proceeded the categories were developed and reviewed using an inductive process. Emergent themes were used as a lens for further readings, and rereading, to ensure validity and to search for potential omissions (Braun & Clarke, 2006). As second and third readings progressed the focus moved from the explicit to the latent evidence (Bowen, 2009; Braun & Clarke, 2006; O'Leary, 2017).

Subject discipline conceptual understanding and knowledge. **Traditional beliefs and misconceptions**	Demonstrate skills and knowledge in their subject area's content and the required subject specific pedagogical skills (PCK),and can link these to other areas across and beyond the curriculum pg.17 Select and use appropriate pedagogical approaches to match the learning intentions of the lesson, pg 19 Can orchestrate learner-centric experiences which make the learner aware of structures rules, patterns and connections within the subject discipline and beyond, pg.19 Plan collaboratively for learning activities that enable students to make meaningful and challenging learning connections between subjects, pg.20	Inform their professional judgement and practice by engaging with and reflecting on learning theory and pedagogy pg.8	Facilitate students to develop a wide range of skills, thinking strategies and discipline knowledge. Pg.28 **Pg12 Statements of learning** Describes, illustrates, interprets and predicts and explains patterns and relationships. Pg.12 observes and evaluates empirical events and processes and draws valid deductions and conclusions pg.12 applies practical skills as she/he develop models and products using a variety of materials and technologies 12 takes initiative, is innovative and develops entrepreneurial skills12 brings an idea from conception to realisation12
Creating supportive learning rubrics and templates	Provide learning resources and structures to encourage students to design their own, pg.16 Design and prepare in advance sequences of learning activities and learning resources tailored to match pg.18 Learning design is flexible to allow for emerging learning opportunities, pg.18 Possible without flexible practitioners with academic content knowledge? Can employ planning, design and preparation to interpret translate and devise accessibility for the learner to new knowledge pg.20 The Inspector considers teachers' preparation for the lessons taught and the effectiveness of the teaching approaches used , pg.10 The Inspectors evaluate methodology, class management, class atmosphere and learning within the lessons observed, pg.32	Develop teaching learning and assessment strategies that support differentiated learning in a way that respects the dignity of all students pg.7 engage with the planning, implementation and evaluation of curriculum at classroom and school level.	Through a range of assessment activities the teacher helps the student to identify what has been achieved and where there is room for further learning and development Being Creative Managing information and thinking two of the key skills together with being literate and numerate. These are capacities that will need to be resourced and structured. They are not skills that can be just mimicked a
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning.	"Be proud of our schools and the ongoing work by teachers and others to make learning experiences for all students relevant, challenging and imaginative" Richard Bruton pg.5 Emphasises a need for students to develop a broad range of skills, competences and values that enable personal well-being, active citizenship and lifelong learning, pg.6 Teachers promote and plan for student autonomous ownership of their own learning. Provide for a clear sense of attainable and challenging learning outcomes. Progress and assess subject specific skills and dispositions as well as knowledge. Develop success criteria so learners can actively evaluate their own learning pg 13 Orchestrate learning experiences so that learners engaged and interested in the learning and can explain the purpose of what they are doing, pg.15 Providing opportunity and environment for learners to see risks and mistakes as part of the learning environment, pg 15 Teachers skilfully manage their own input to optimise student participation and response, pg 18 Teachers collaboratively plan learning experiences	seek to motivate, inspire and celebrate effort and success, pg.7 Plan and communicate clear, challenging and achievable expectations for students pg.8 Create an environment where students can become active agents in their own learning pg.7 Such reflective processes will also facilitate teachers in considering the complex ways in which their learning can benefit their students (not just in terms of student learning outcomes, but more broadly in terms of their levels of motivation, interest, engagement, and enjoyment, etc.), school culture, and the wider school community.pg.10	Supports an Inclusive and relevant education, pg.6 Pg 11 8 key principles High quality curriculum, support students in developing greater independence in learning. Pg11 Curriculum, assessment, teaching and learning provide opportunities for students to be creative and innovative,pg11. The experience of curriculum, assessment, teaching and learning encourages participation, generates engagement and enthusiasm, and connects with life outside the school.pg.11 Brings an idea from conception to reality. Pg.12 Ongoing formative assessments, CBA's and formative feedback Written activities will be designed to extend, enrich and consolidate students' knowledge and skills, and to afford them opportunities for independent thought and reflection

Table 4.3: Sample outline of teachers' pedagogical role as conceptualised in Key Policy Documents (Explicit Data)

Presenting outcomes from the policy exploration

Response to Research Question 1

How do current key Irish policy documents concerned with lower secondary teaching and learning in Ireland conceptualise pedagogical understanding and practice?

The purpose of this policy analysis was to gain a deeper understanding of how the different agencies publishing recent curricular and teacher role policies conceptualise pedagogical reasoning and practice as a key concern for teaching practitioners operating in lower secondary in Ireland. This next section aims to outline and then synthesise the findings of this analysis. As noted above, initially, a deductive framework was employed, but as the analysis proceeded the emerging codes and themes were influenced inductively. The resultant codes and themes were then employed in the next stage of data analysis which looks to explore the associated pedagogical understandings and practices of PSTs in one ITE program, through their written recordings in their reflective portfolios.

The following section headings reflect the synthesised themes relating to the pedagogical practice and knowledge sought by the policies as generated at the conclusion of the analysis process. These should be seen as the response to the first research question of Chapter 2.

Pedagogical Dispositions

As described earlier, the policies refer to a significant practice change to meet the requirements of the new curricular framework operating in lower secondary in Ireland (Education, 2015, p. 14, 2016, p. 16). The new curriculum is described as learner centred (Education, 2015; D. o. E. Inspectorate, 2016) and it is suggested that the principles underpinning teaching and learning practice can be applied to all contextual settings (Education, 2015; D. o. E. Inspectorate, 2016). These principles refer to the valuable deep learning and thinking contained in subject specifications, and the

> outlined standards of teaching practice and learner experience. The teacher is no longer looked for to be the examination coach, but a supporter and facilitator of each student's individual learning (Education, 2015, p. 30).

> Learner centred constructivist sentiments are echoed in the finalised 2015 *Framework for Junior Cycle* document. It notes that constructivist principles aim to enable learners "to use and analyse information in new and creative ways, to investigate issues, to explore, to think for themselves, to be creative in solving problems and to apply their learning to new challenges and situations" (DES, 2015). This generation of curricular policies clearly seek Irish teachers to espouse a constructivist influenced ideology and to adopt planning and practice strategies which reflect the same disposition. This study acknowledges that transmission and constructivism are not an analogue or a binary, but a scale or spectrum. It also acknowledges that constructivist style learning can occur through direct instruction practices such as lectures (Richardson, 2003). This study defines transmission style pedagogical practice as that which witnesses teachers telling content and passive learners engaging in transcription and recitative roles and responses.

Proponents of constructivist learning theory corroboratively claim that it promotes independent learners, who cognitively and conceptually understand both learning strategies and subject disciplines. Students are said to 'construct' their own meaning by building on previous knowledge and experience. Exposure to new ideas and experiences force the learner to accommodate new stimuli alongside existing knowledge by constructing new or revised rules within their own independent understanding (Bruner, 1996; Dewey, 1964; Illeris, 2009; Vygotsky, 1962).

Anticipative Conceptual Understanding

> In this generation of policies, the aim is for teachers to be collaborative creators of powerful learning experiences, which support the development of deep, integrated and transferable subject discipline knowledge for the learner (DES, 2015; D. o. E. Inspectorate, 2016). These learning experiences are described as providing opportunities for students to apply practical skills, illustrate, interpret, predict and

explain patterns and relationships, to evaluate deduce and conclude, to bring from conception to realisation and to be able to take the initiative on all of these learning processes (DES, 2015).

In order to facilitate these processes, the pedagogical capacity looked for from teachers is considerable. For example, the LAOS document clearly states that high levels of pedagogical skill will be required by teachers to enable them to assume the role described in its framework (D. o. E. Inspectorate, 2016). Teachers are encouraged to have discipline knowledge above and beyond the subject matter of the curriculum (D. o. E. Inspectorate, 2016, pp. 17, 20). Furthermore, subject specific pedagogical skills and reasoning to orchestrate subject specific conceptual understanding (D. o. E. Inspectorate, 2016, pp. 17, 19) and a competent knowledge of how to facilitate the learner in demonstrating that knowledge (D. o. E. Inspectorate, 2016, p. 13), are also required. These capacities are identified and explicated in order to encourage teachers to parse the conceptual within their discipline and to predict the challenges the learners might experience while assimilating them.

Ability to design scaffolding resources to support learning for all learners

The policy analysis suggests that the classroom practitioner is expected to develop capacity in designing and preparing learning resources which can be used to support the individual learners on the challenging journey of disciplinary conceptual assimilation. The pertinent policies describe practitioners who will plan, prepare and design to interpret, translate and devise accessibility for the learner to new knowledge (Council, 2016a; D. o. E. Inspectorate, 2016). It is claimed that in order to be able to do this, pedagogical reasoning will need to be interwoven into the learning preparation and planning process (D. Inspectorate, 2016, p. 32). The academic, curricular and subject content knowledge, spoken of above, is described as crucial to enable the practitioner to sequence learning appropriately, and source and provide matching resources to support that learning (D. o. E. Inspectorate, 2016, p. 18). Teachers are further looked for to be pedagogically adaptive in their sequencing and resourcing to

allow for the unexpected that can emerge with any group of individual learners (D. o. E. Inspectorate, 2016, p. 18). Engaging in this complex level of subject specific pedagogical and knowledge reasoning is also hoped to enable teaching practitioners to engage in a rolling evaluation of the curriculum, at both a classroom and a school level (Council, 2016b).

Motivating Learners through Purpose

Autonomy for the learner in the process of learning is a clear principle of a learner centred curriculum (Education, 2015). That autonomy is suggested to emerge from a clear understanding of the purpose of the learning, a personal connection with that purpose and an active proficient involvement in the entire learning process (Council, 2016b, p. 7; Education, 2015, p. 11; D. o. E. Inspectorate, 2016, p. 13). Relevant, challenging, imaginative and attainable learning outcomes are presented as key drivers of motivation and inspiration to learn, and it is suggested that these should be co-constructed and communicated with the learners (Council, 2016b; Education, 2015, pp. 5, 6). It is suggested that these expectations should be made explicit by the planning of learning intentions and the crafting of success criteria which reflect the breadth and depth of potential learning (D. o. E. Inspectorate, 2016). Armed with clear purpose, expectations and explicit criteria, it is implied that the teacher would thus manage their own input into the learning experience, avoiding excessive dominance (D. o. E. Inspectorate, 2016, p. 18), and promote the learner's independence, enthusiasm for and active agency in their own learning (Council, 2016b; Education, 2015; D. o. E. Inspectorate, 2016).

Learning motivation (Theobald, 2005), together with knowledge and skills have been highlighted as the central learner foci of the DES Inspectorate when they visit schools (D. Inspectorate, 2016). Constructivist proponents suggest that a key influence in students' authentic learning engagement is their belief that the structure and format of the learning process is fabricated to facilitate a journey of personal learning improvement for them (Bruner, 1996; Ryan & Deci, 2000b; Theobald, 2005). Consequently, they further claim that fostering disequilibrium as a pedagogical

strategy pressurises processes of disassembly and reassembly in adolescent learners' conceptual schema. The practice of teachers providing for, and encouraging, learner mistakes (disequilibrium) in the learning process is clearly supported (D. o. E. Inspectorate, 2016, p. 15). Planning for learner misconceptions and unstable prior knowledge are also clear pedagogical principles connected with this style of curriculum (D. o. E. Inspectorate, 2016, p. 19). The policies seem to convey strong support for this pedagogical practice as a key factor in increasing learner engagement.

Individuality in learning

Inclusivity for all is a key shared educational principle across this generation of policies. Teachers are encouraged to acknowledge the uniqueness of all students and to devise pedagogical strategies to reflect the same, (Council, 2016a, p. 18, 2016b, pp. 7, 8). One of the means suggested for this process is to contextualise the learning intentions for schemes of learning according to the context of place and people, (D. o. E. Inspectorate, 2016, p. 18). The Inspectorate are quite specific about clarifying that although *LAOS* says that "all domains and almost all standards are applicable to all schools regardless of context" (D. o. E. Inspectorate, 2016, p. 10), they, as an organisation, are sensitive to and take into consideration contextual factors when they evaluate (Skills, 2016). The importance of contextual considerations is also foregrounded by the NCCA (Education, 2015, p. 26).

It is also suggested that the planning process should prepare for moments and opportunities to give differentiated formative feedback to each learner about what learning they have progressed with and where there are "areas of, and strategies for, improvement" (Council, 2016b; Education, 2015; D. o. E. Inspectorate, 2016, p. 18). According to commentators in this field, planning and preparing for learning which is cognizant of all the individuals' strengths and weaknesses within any learning group requires considerable pedagogical flexibility and adroitness. For example, pedagogically *Assessment for Learning* (AFL) strategies require considerable connection of assessment planning with purpose, sequence and resourcing of learning (Black & Wiliam, 2005).

Individual and collaborative reflective practice

The *Teaching Council's Cosan* policy quotes Dylan William saying "Teaching is such a complex craft that one lifetime is not enough to master it"…William, (2011) in *Teaching Council* (2016a, p. 2). This generation of policies sees teachers as leaders of learning, co-creating learning opportunities with students (Council, 2016a; Education, 2015). Within that domain of 'leading learning', subject knowledge and PCK are listed first amongst the looked for capacities (Council, 2016a, p. 18). Teachers' pedagogical skilful capacity is said to be vital, and teachers are called upon to be proactive in developing those pedagogical skills, both in an individual and a collaborative capacity (Council, 2016b; Education, 2015, 2016; D. o. E. Inspectorate, 2016; Skills, 2016).

Improving personal/professional learning is seen as the primary objective for teachers' growth and development (Education, 2016). This 'improvement' within the new curriculum focuses on developing knowledge, skills and thinking abilities in the learner (Education, 2015, pp. 7, 29). The pertinent policies contend that these learner capacities are to be developed using broad, challenging, and responsive learning experiences where learners can be active, engaged and purposeful and have opportunities to critically apply their learning (Education, 2015, p. 29, 2016, p. 16). In order to facilitate this type of learning, the policies encourage teachers to seek professional improvement, to gain the capacity, to combine a knowledge of pedagogy, learning theory and educational policy.

In their relevant publications the Irish *Teaching Council* are adamant about the professional development values and beliefs, generally held by the teaching profession, which will enable practitioners to achieve this 'significant' practice change. The Council advocates for an autonomous, practical, and ethical self-regulating profession (Council, 2016a, 2016b). It takes its dual role of advocacy for, and regulation of, as separate, but also interdependent (Council, 2016a, p. 2). It strongly endorses that minimum ethical standards of respect, care, integrity and trust are drivers for teachers' commitment to quality teaching and learning for their students and

themselves (Council, 2016a, 2016b). The key professional development methodology with which to achieve these significant changes is stated to be 'reflective practice', which looks to critically evaluate professional practice, and seek opportunities to actively maintain and improve it (Council, 2016b). A long career, with intrinsically motivated professional development engagement, cognizant of career stage, is stated to be as what is professionally expected of practitioners (Council, 2016a, 2016b; Education, 2015, 2016; D. o. E. Inspectorate, 2016), and learning theory and pedagogy are suggested as key foci of that engagement (Council, 2016b, p. 8).

In order to facilitate the type of pedagogical practice that these policies seek, the practitioner is urged to consistently reflect on their own practice. This vital process is expected to be engaged with both individually and in collaboration with colleagues (Council, 2016a, 2016b; Education, 2015, 2016, pp. 6, 16; D. o. E. Inspectorate, 2016). There are external and internal actions that can promote the sort of looked for reflections. Teachers are encouraged to lecture, mentor, contribute to curriculum development, and research (Council, 2016a, pp. 15-16). Internal school options mainly concentrate on the potential of SSE. SSE cycles that focus on teaching and learning are encouraged and the process is suggested to be integral to the authentic implementation of the Junior Cycle Framework (Education, 2016, p. 45).

Ideological/Format differences?

This analysis has been concerned with constructing a synthesis in relation to pedagogical development intent of different agencies publishing in the Irish educational domain. Although the manner in which the findings are presented in this policy analysis chapter may suggest to the reader that the policy publications from these educational bodies were completely aligned and synchronised, this is not exclusively the case. The central educational policy actors are not always pulling in the same direction with common purpose. They can claim "significant congruence, with common key messages emerging" (Council, 2018, p. 19), but the findings of this study's analysis would suggest that the collective dispositions, and the supported processes

for achieving the stated outcomes of the current generation of policies appear divergent among the key agencies.

This unease, particularly between the DES and the Teaching Council has been witnessed before during the development and trial phase of Ireland's teacher education's *Induction* programme (Council, 2012; Ireland, 2012). The DES framework that was originally piloted CEPP (*Career Entry Professional Programme*) was challenged by teachers and their representatives and then completely revised with the publication of *Droichead* (Council, 2017). The key disagreements related to the regulatory body's primary role; either being advocative or evaluative, and the profession itself taking a stronger role in self-regulation.

In this generation of policy, focussed on teachers' planning and practice, the DES, the Inspectorate and the NCCA are far more explicit with the types of attitudes, understandings, and practices that they are looking for, while the Teaching Council tend to employ more vague descriptions and terminology. Specific examples of this include the terminology for teachers' professional learning (*self-regulating, autonomous and professional*) (Council, 2016a, p. 7), pedagogical development (*engaging with and reflecting on learning theory*) (Council, 2016b, p. 8), Differentiation (*Acknowledge the uniqueness of pupils) (Council, 2016b, p. 7).* These examples contrast with the explicit specificity of the LAOS standards published by the DES.

Perhaps ideological differences between the agencies are most openly revealed when one considers that the *Teaching Council* openly rejected the opportunity to employ the DES LAOS standards when developing the in-career teacher CPD framework *Cosan* (Council, 2016a). The Council agreed that some standards would be required with which to structure the professional development of teachers moving forward (Council, 2016a, p. 25), but conspicuously do not adopt those standards contemporaneously published by the DES in the *LAOS* document (D. o. E. Inspectorate, 2016). The DES could be placed further along the spectrum of wanting, what has been framed as, a more autocratic performativity in the system (Gustafsson et al., 2015; Lingard, 2013). The *Teaching Council* seem to be concerned about potential accountability measures

focussing on the 'datafication' of leaner performance that are synonymous with those autocratic performativity measures (Lingard, 2013).

On a more practical note of policy formatting, it can be contended that the decision for the NCCA to produce a document that was predominantly learner focussed (DES, 2015) and the Inspectorate to produce a document predominantly teacher focussed (Inspectorate, 2016), without first having synergised the two, was regrettable. Considering the complexity of the desired role pivot for teachers a shared language may have been helpful in providing a consistent message and approach for classroom practice change. It is acknowledged that the SSE process was devised, however retrospectively, to enable individual schools and teaching staff to make sense of the changes. Further pre-emptive explanatory interpretive resources would, in my opinion, have been very useful.

Discussion

Policy Origins

The short historiographical piece at the commencement of this chapter was necessary to promote reflection on how we may have arrived at this curricular/policy destination. The dominant interpretations of these systemic educational policy and curricular repositioning's in research and scholarship has suggested that Ireland is the victim of external supranational influences such as GERM and PISA (Ball, 2007; Conway & Murphy, 2013; Gleeson & Sugrue, 2004; Sahlberg, 2012; Sugrue, 2006). Whilst this study acknowledges such influences, its review of the literature and policy analysis also suggest that there are a number of additional factors to be considered in the Irish context which distinguish it from international policy adoption and compliance in other jurisdictions. Strong teaching unions, an independent *Teaching Council*, university-based teacher education programmes and the engagement of internationally respected academics, such as Hargreaves, Fullan, Priestly, Biesta, Sahlberg and Hattie, to assist with the curricular development process, has, in this researcher's opinion, aided a more integrated holistic approach to policy making in Ireland. This can be contrasted to the formats of policy/curriculum development in Australia or England

where the social partnership model is distinctly absent (Braun et al., 2010; Gleeson et al., 2020).

This study's analysis suggests that the development and improvement of pedagogical skill is a key concern of this generation of policies. According to the policy review and analysis outlined above, these calls pointed to the centrality of pedagogy in enacting significant change to the learning and teaching in the everyday classroom. This study argues that this concern ought to be afforded a more central contributory role than what has been assigned it by the contributors to the field heretofore. Admittedly, financial crises, bullish ministers, and PISA influence were factors in initiating policy action (Conway & Murphy, 2013). This study acknowledges these factors as influential but argues that the current suite of policies was also influenced by nearly fifty years of consistent calls to pivot the Irish education system away from dominant summative assessments whose backwash effect promotes content transmission style teaching and recitative learning.

The observations of the OECD team in 1991 echoed national concerns voiced over the previous twenty years. The Byrne Report Committee of 2002, the findings of TALIS, and the ESRI research by Smyth et al, generally suggested an ongoing systemically encouraged approach, by Irish practitioners, to pedagogy that was both conservative and transmissive in style. In contrast, the new policies, analysed by this study, require practitioners who, generally, have a high level of pedagogical skill, who plan and reflect collaboratively, and who facilitate deep learning for the learner, the centre of the learning experience. This study's policy analysis outlined above suggests that commentators have overly focussed on these factors to the detriment of a more singular focus on the systemic pedagogical problem.

This influence of pedagogical reform seems to be reflected in the manner by which the NCCA and the JCT (Junior Cycle for Teachers) have repeatedly refused to specify junior cycle curriculum content, or to disseminate overly specific examination details, in the face of considerable opposition from some teachers and teacher representatives (Hyland, 2019; Kennedy, 2020). The position of the NCCA and the JCT appears to be

that capitulation on this issue would undermine the principles of the sought pedagogical practice shift and result in a return to the practices of the terminal assessment dictating teaching and learning activities, which, according to recently published research, a significant proportion of practicing teachers report they would like to happen (Assessment, 2018; Byrne & Prendergast, 2020).

Research has consistently linked specificity in syllabus documentation to the predictability of terminal assessments as well as to excessive focus on those assessments to the detriment of achieving the learning outcomes of the curriculum (Baird et al., 2014). 'Cracking the code' has been a dominant assessment coaching strategy in Ireland for many decades and a recent review of the Leaving Certificate strongly discouraged the continual use of this methodology in practices for drilling students and rote learning (Caro & Hopfenbeck, 2014, p. 27). This study suggests that NCCA publications on the matter understand that they, as an agency of curricular reform, are aware of the centrality of pedagogical capacity development in the profession and see it as a fundamental component in enactment of currently looked for curricular changes (Assessment, 2010; NCCA, 2009, 2011a, 2019).

Intent and Implementation

This generation of educational policies requires practitioners with a constructivist pedagogical disposition (Education, 2015; Inspectorate, 2016) and the policies classify the practitioner's pedagogical role to an extent heretofore not witnessed in Ireland (Conway & Murphy, 2013). Practitioners are mandated to develop a global disciplinary knowledge and a complex disciplinary conceptual understanding. They are to use this disciplinary awareness to prioritise powerful forms of learning in their discipline as well as to anticipate/predict learning misconceptions and challenges with those forms, from the perspective of the learner. Practitioners are further encouraged to harness this disciplinary 'awareness' to source and/or design resources to scaffold the target learning appropriately for individual learners. These roles are in this study's opinion far removed from the roles of 'fact purveyors' and 'examination coaches' that the profession's practice has been labelled with in the past (Byrne, 2002).

In advance of the implementation of this new curriculum and its associated role change for teachers, there were both national and international forewarnings about systemic strategies and approaches needed for policy implementation where significant reform is sought (Buachalla, 1988; Cuban, 1998; Elmore, 1996; Fullan, 2007a; Shuilleabhain, 2016). Moreover it is claimed that, teachers, especially experienced practitioners, are capable of finding 'work arounds' to whatever educational policy seeks, and this has witnessed decreased levels of implementation fidelity for educational policy across the decades, (Cuban, 1998; Priestley et al., 2021). In Chapter 3, Elmore's principles in respect of policies seeking radical practice change were outlined. It should be noted that the types of changes required are congruent with Cuban's coined '2nd order' change, (Cuban, 1988), in that the aim is not to augment existing practice, but to redesign and redefine it. Elmore also concurred with Cohen that those policies which focus on ideological principles without explicating the means by which those principles are to be achieved, are confronted with significant challenges during the implementation process (Cohen, 1993; Elmore, 1996).

Other commentators have stressed that extensive supports should be in place before an educational reform is introduced, if authenticity in implementation is to be achieved (Halász & Michel, 2011; Sahlberg, 2006; Woodbury & Gess-Newsome, 2002). Moreover, Fullan argues that unless practicing teachers have considerable pedagogical enactment opportunities during their professional development continuum, it is unlikely that they will be in the position to authentically implement the radical and profound practice changes required by policy change (Fullan, 2007a). In the Irish context, the role changes required are similarly significant. The learnings from Scotland, a country which recently employed a similar curricular redesign, seem to highlight the significance of advanced premeditated consideration of the contextual conditions necessary to foster these teacher role changes before the publication of policies or frameworks (Priestley & Drew, 2016).

It is important to highlight this policy context in order to show the influences driving teachers' roles; these policies consistently advocate for the significance of pedagogical

reasoning and adaptivity as lynchpins to the degree of policy implementation and enactment. The style of pedagogical practice outlined above is being looked for in an environment that has consistently been referred to as an entrenched pedagogically conservative 'status quo', which has heretofore been notoriously difficult to disrupt (Byrne, 2002; Gilleece et al., 2009; Looney, 2006; OECD, 1991; Smyth et al., 2007; Smyth et al., 2006; Smyth et al., 2004; Sugrue, 2002). Significantly, there have been extensive forewarnings about the complex, clinical and integrated style of teacher education that is required if the continuum is to be able to facilitate the fostering of these type of pedagogically adaptive and adept practitioners (Darling-Hammond, 2012; Hislop, 2011; Korthagen et al., 2006; Loughran, 2013; Pasi Sahlberg, 2012; Tirri, 2014).

Consistency and Cooperation

In the educational policy development arena, Ireland prides itself on a consensus building approach with numerous bodies and actors jostling for control of the change agenda (Coolahan, 2017; Gleeson & Sugrue, 2004; Harford & O'Doherty, 2016). The DES, State Examinations Commission (SEC), the NCCA, Teacher Unions, The Teaching Council, HEI's, the Inspectorate and business and industry agents all vie for influence. This consensus approach has been dismissed in other international jurisdictions for heralding implementation ambiguity and policy failure (Banathy, 1995; Howlett et al., 2017; Spillane et al., 2002; Taylor, 1997). The international experience warns that a policy building approach like Ireland's is debilitating because of the number of brokers seeking dominant influence. Ireland's policy drafting process could be said to be further undermined as some of the involved agents believe the consensus building approach, afforded the education partners during the policy formation stage, is more akin to 'lip service', lacking real authentic partnership (Harford & O'Doherty, 2016).

From an Irish policy implementation perspective. O'Buachalla highlighted the importance of synchronisation of the different agents and agencies involved. He suggested that implementation cannot be expected to follow smoothly and successfully from the policy formation stage, unless it is planned for in detail and supported by programmes, guidelines and interactions with the implementing

agencies (Buachalla, 1988). However, similar to our European neighbours, the experience of our teacher education continuum is one which has been described as "fragmented and often ad hoc and CPD itself is narrowly defined, lacking in theoretical basis, and rolled out in stops and starts rather than in any coherent or sustainable way" (Harford, 2010; Sugrue, 2002).

The main contributors to this generation of policies may have similar aims, but the rationale and means for achievement appear divergent. They present at different points of the autonomy/subjugation scale in relation to the teaching profession and this impacts the manner by which they explicate the looked-for pedagogical understandings and practices. In this study's opinion it is regrettable that, in a country of Ireland's size, that genuine interagency consensus could not have been achieved in relation to the sought pedagogical standards, which shared terminology and means.

It is important to clarify that this study is not concerned with rigid 'execution' of educational policy, but rather a policy enactment which inevitably witnesses interpretation and translation (Bell & Stevenson, 2015). Consequently, this study explores policy intent and implementation in a manner congruent with the constructivist epistemological tradition which orients it. One of this study's premises is that despite interpretation and translation, systems move in the direction of the change aimed for in policies, rather than moving towards a specific predefined target (Fullan, 2007b).

Chapter 5: Research Methodology

Introduction

The rationale of the first stage of this research design was to establish the extent to which pedagogical understanding and enactment capacity were looked for from current lower secondary teachers by conducting a documentary analysis on the

current generation of applicable policies. The previous Chapter's policy analysis findings suggested a significant focus on pedagogy with which to support newly framed learner-centred curricula.

The second stage of this research explores the extent to which these policy-sought pedagogical capacities were understood and practiced in the *Initial* phase of the teacher education continuum. This exploration was limited to a sample from one year group from a HEI, based in Dublin.

The opening section of this methodology chapter outlines my epistemological stance and describes the journey by which I arrived at this particular research methodology. The *Research Design* section describes the data analyses stages and how each methodological choice was appropriate within the chosen epistemological tradition (Crotty, 1998). It also defends these methods, over other available options, employing potential reliability and validity criteria. Ethical processes and dilemmas are documented in the following segment. In this chapter's penultimate section, the sampling selection process and rationale for the *Qualitative Content Analysis* (QCA) and the *Focus Groups* of the research is explained.

The process by which the data collection process was carried out is then outlined. Finally, this section explains the QCA process concentrating on how it is interwoven with *Table 3.5* to construct a framework through which to analyse the PST's pedagogical understanding and practice. The final section of this chapter demonstrates the process of design for the focus group. It specifically outlines the process by which the focus group triangulates the qualitative data. It also identifies the relevant data which the focus group is uniquely positioned to discover and through which mechanisms this data was revealed. Ethical considerations which informed all of the above conclude the chapter.

Research Design

This research is interpretivist by design. The study's aim was to inductively construct insight from the analysed pedagogical understandings and practice of sampled PSTs. In

education, teacher education and education research we are dealing with individual human beings and "human behaviour unlike that of physical objects cannot be understood without reference to the meanings and purpose attached by human actors to their activities" (Guba & Lincoln, 1994, p. 106). The research also afforded the PSTs, through a triangulating opportunity (*Focus Group*), to further explain their thoughts, words and deeds, drawing on the experiential benefit of a further year completed in their professional course.

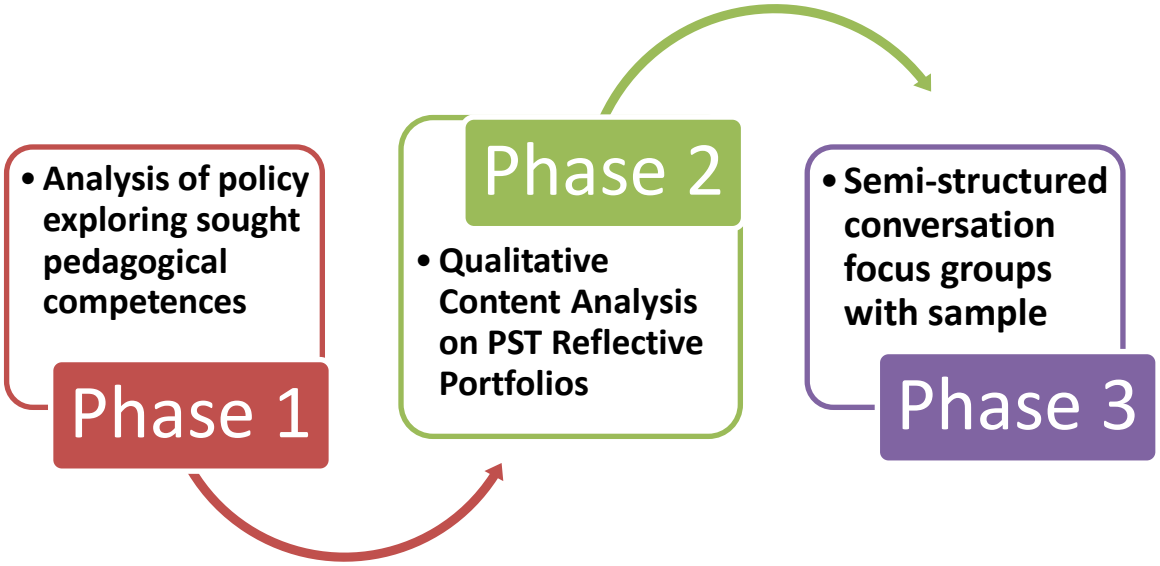


Table 5.1: Research Design Flowchart

Epistemology

As outlined in Chapter 1, my career's educational practice has witnessed numerous iterations of praxis development, review and augmentation. Influential fundamentals and principles emerged from this practice development. On reflection, I would suggest that these developmental experiences planted positivist foundations in my ways of thinking. Positivism "reflects a deterministic philosophy in which causes probably determine effects or outcomes" (Creswell, 2008). When a practice is observed to be successful it can become an assumption that it can be replicated. However, for the validity and reliability of this piece of interpretivist research, it is essential that these

prior epistemological tendencies remain subordinated to the natural inductive emergence of the authentic data. With the intention to explore pedagogical understanding and practice, it is not assumed that this research alone could proffer solutions to complex issues or problems (Biesta & Burbules, 2003; Crotty, 1998; Dewey, 2004). This research is exploratory in nature. For this reason, positivism was not considered as an appropriate research stance despite the researcher's acknowledged previous personal leanings.

The interpretivist paradigm offered a plausible methodology for this study (Bell, 2010; Biesta & Burbules, 2003; Creswell, 2006; Crotty, 1998; Krippendorff & Bock, 2009; Silverman, 2013; Weber, 1990), because this epistemological approach acknowledges possibilities over absolutes. These possibilities are dependent on the context/perspective of the respondent. An assumption of this research is that multifaceted contextual realities will influence the PST's PCK interpretation and understanding (Berg, 2004; Cohen et al., 2007; Creswell, 2006; Guba & Lincoln, 1994). At best the findings that emerge from this exploration will be indicative of a wider range of realities experienced by PSTs generally, as they progress amidst the pedagogical formation process.

Phases of the research

Phase 1: Policy analysis: Introduction

Phase One of the research, as detailed in the previous chapter, outlined and analysed the different ways in which pedagogical understanding and enactment are defined in relevant contemporary Irish educational policies. It focussed on how these pedagogical capacities of teachers at lower secondary level in Ireland are framed and understood through policy. A desk-based document/thematic analysis was employed for this stage of the research. At a macro level this phase also explored the origins and the congruence of these policies. This phase then employed the revised 2012 PCK framework (*Table 3.5*) to provide an academic overview of the PCK construct.

Loughran's CoRes (*Table 3.6*) complemented this by focussing on the enactment aspect of PCK practice.

The combined constructs provided an analysis framework (*Table 4.1*) by which to explore the policy and framework documents, filtering for references to pedagogical understanding and enactment, for Irish teachers, as suggested in the text of the policies. In order to maintain research consistency and coherence, the same framework used for the analysis of the relevant policies in phase one, also heavily influenced the lens by which the work in Phase Two and Three of the research was to be carried out. The research assumption was that the work would be strengthened if only pedagogical fundamentals and principles, clearly identified in the relevant policies, are investigated in the *portfolio analysis* and *focus groups*.

Phase 2: Student Reflective Portfolio Analysis:

Selecting a methodology

PCK can be a challenging construct to capture in practice (Depaepe et al., 2013). This is largely due to the tacit nature of that practice which educators tend not to verbalise and take for granted. According to Loughran, the likelihood of PCK being uncovered increases over the length of time employed analysing the practice (Loughran et al., 2004). This is one of the compelling reasons why this study chose to analyse a sample of professional reflective portfolios of PSTs across a full year of practice. Its interpretivist potential to construct a reality based on participants views was also decisive (Cohen et al., 2007). The reflective nature of the portfolio also unlocks potential for the PST to articulate and explain their practice (Korthagen et al., 2001) with the opportunity for delayed reflection on preparation and practice. This delayed reflection has been suggested to be a particularly effective practice for accessing the understandings and applications of inexperienced practitioners (McDuffie, 2004). This was a compelling factor for rejecting in-person observational methods for capturing the data for this study. The resultant portfolio analysis was used to assess to what extent pedagogical competence was understood and activated in preparation, planning and reflections on practice by the PST respondents.

This study notes the importance, flagged in the literature, when studying PST portfolios of acknowledging their "audience", as well as the author and their message, throughout the process (Berg, 2004; Bowen, 2009). The interpretivist paradigm of research presumes multiple or diverse realities. As such the triangulation method of multiple qualitative sources is expected in qualitative research to boost reliability and validity (Crotty, 1998; Golafshani, 2003; Patton, 1999). This process will be engaged with faithfully to enable the most valid and reliable pedagogical understandings and practices to emerge.

In the Classical tradition, Hermes was the messenger of the gods. Consequently, he had the capacity to interpret the gods' messages so that they in turn were interpretable to humans. Hermes bequeaths his name to the *hermeneutic* tradition in social research in that its focus is on the exploration and interpretation of human experience. The ontological and epistemological stance of this research is interpretivist and as such the methodological challenge of the research design was to source a methodology, congruent with these knowledge perspectives, that could reveal the pedagogical understanding and enactment experience of the sampled PSTs. Considerable searching led this researcher to *Qualitative Content Analysis* (QCA) which in my view provided an appropriate methodology within the conceptual framework of this research.

Another potential qualitative text analytical alternative for this research could have been *Grounded Theory* (Hsieh & Shannon, 2005). *Grounded Theory* is the systematic inductive generation of theory from systematic research. It formulates theory from an analysed consensus of contextual practice (Charmaz, 2014; Glaser & Strauss, 2017). Conceptually, grounded theory challenges the hegemony of quantitative empirical research and posits that practitioners are not automated compliance objects, but actors who negotiate and interpret policy (Charmaz, 2014; Cho & Lee, 2014). Epistemologically and methodologically there is considerable overlap between *Grounded Theory* and *QCA* (Cho & Lee, 2014; Creswell, 2008), but, unlike *Grounded Theory* which inductively facilitates themes to emerge from the analysed data, QCA is the more structured and directed in its approach, focussing on answering the research

questions, while allowing for new patterns and meanings to inductively emerge and influence in tandem (Mayring, 2019).

In the context of my autobiographical account in Chapter 1, the potential for the analysis of the latent content of the texts by a contextual native, as well as the explicit and manifest content, suggested that, for this investigation, *QCA* was a more appropriate fit than *Grounded Theory* (Cho & Lee, 2014; Hsieh & Shannon, 2005; Krippendorff & Bock, 2009; Mayring, 2014; Schreier, 2012; Weber, 1990). A second selection influence is QCA's unique characteristic of offering a mixed procedure, integrating deductive and inductive approaches in constructing the categorisation process (Cho & Lee, 2014; Mayring, 2014; Ryan & Bernard, 2003) meaning it was more applicable to a research design with specific purposeful research questions as opposed to a more open ended approach. The policy analysis framework at *table 4.3* was used initially to structure the QCA portfolio analysis. The respondents' data contributed inductively to the further development and refinement of that framework as the analysis progressed. Thirdly, QCA is focussed on a data reduction process, as opposed to a theory formulating process, "limiting analysis to those aspects that are relevant with a view to your research question" (Mayring, 2019; Schreier, 2012). Primarily for these three reasons QCA was chosen over other potential interpretivist methodologies such as *Grounded Theory.*

A synthesised description of QCA can see it defined as a systematic qualitative data reduction process which attempts to make sense of a large volume of qualitative material, identifying core meanings and connections contained within (Hsieh & Shannon, 2005; Patton, 2002), "a desire to know something currently inaccessible and the belief that a systematic reading of potentially available texts could provide answers" (Krippendorff & Bock, 2009). These potential 'answers' emerge from patterns and meanings contained within the manifest and the latent references in the texts (Mayring, 2014). As a qualitative content analyst, one makes reliable robust and valid inferences from texts, applicable to the contexts of/for their use (Cho & Lee, 2014; Krippendorff, 2018; Merriam, 2001). It is a methodology which particularly allows researchers to interpret meaning and gain a deeper understanding from

documents formulated by tentative embryonic professional practitioners, something that further corroborates this study's selection of the reflective portfolios as an explorative vista on PSTs pedagogical understanding and enactment (Cho & Lee, 2014; Schreier, 2012). It has a disciplined research question focus on targeted categories, but also allows for the inductive emergence of the unexpected (Mayring, 2014). It has been found to be the most frequently employed text analytical procedure, (39%), amongst qualitative research methodologies and this study suggests that this further supports its validity as a methodology (Titscher et al., 2000).

A final rationale for the employment of QCA is the potential of abstractive reasoning. Abstractive reasoning is a key strategy employed by the qualitative content analyst. It involves a contextual native inferring the most plausible interpretation of the texts under investigation. This is gleaned from both the manifest and the latent documentary evidence, the object being to reveal what is significant without misconstruing the original intention (condensation) (Erlingsson & Brysiewicz, 2017). My own personal contextual experience offers plausible epistemological reliability and trustworthiness to the method of interpretation and selection of the pertinent data; one of the greatest challenges for the qualitative content analyser (Cho & Lee, 2014; Graneheim & Lundman, 2004; Krippendorff, 2018; Mayring, 2014). As a school leader, teacher, policy contributor, and teacher educator, I bring contextual understanding and experience that would be more challenging for an outsider to replicate. This experience can potentially result in a large volume of text being transformed into a "highly organised and concise summary of key results" (Erlingsson & Brysiewicz, 2017).

Consideration of Methodological Contentions

QCA emerged from *Quantitative Content Analysis* at the end of the 1970s. It adopted 'rule based systematic analytical procedures' of its parent method but rejected the exclusivity of the quantifiable and instead looked for a deeper interpretation of the multiple realities represented (Mayring, 2019). No 'simple right way' to do *QCA* has been agreed among its central proponents, and researchers must evaluate methods

appropriate to their substantive problem (Weber, 1990). Consequently, critics of the methodology focus on the number of alternative processes pursued. They highlight potential weaknesses caused by a perceived invasion of the subjectivity of the researcher, the inflexibility of the coding mechanism, and assert that the whole matrix is a quantitative mechanism masquerading as a qualitative native (Hsieh & Shannon, 2005; Krippendorff, 2018; Mayring, 2019; Schreier, 2012). It is vital to acknowledge these concerns and criticisms. This research's response was to keep these criticisms as central influences on the means by which its *QCA* was carried out.

Criticisms of this analytical process tend to focus on a presumed predominance of impressionism and subjectivity and a methodological vagueness (Bos & Tarnai, 1999; Prasad, 2019). The mechanisms employed by this research which acknowledged these contentions were:

- Maintenance of a data diary, which outlines the systemic processes applied during analysis.
- Trial analysis carried out on the respondent's texts with the deductive analysis framework in order to ascertain whether it is an appropriate lens to employ.
- Multiple readings used so that the inductive nature of the refinement of existing codes, and the emergence of new ones, were given ample opportunity to form.
- A manual and digital framework to perform the QCA on two independent, but clearly connected, elements of the sampled texts were employed. The digital framework employed, QCAMap, can be viewed at https://www.qcamap.org/ It is suggested that employing both processes provided the opportunity for further oversight on the analytical process.
- Exemplars of the stages of analysis, as performed on the sampled documents, are included in the appendices of the thesis.

QCA's selection was strongly influenced by the researcher being a contextual native, the inductive/deductive combination, and the opportunity to purposively extract

relevant experiences from the texts. The key to validity with this qualitative format is the precision of the process employed.

Ethics

As a researcher of human participants, I have a responsibility to the myriad of agents and actors operating in that system to employ objectivity to the best of my ability. I also have a responsibility to design valid, robust and replicable procedures and methods of data sampling, organisation and analysis. Ethical issues normally concentrate on harm, consent, privacy and confidentiality (Berg, 2004). In order to address these concerns this research obtained explicit formal consent from (Appendix B) prospective participants for both stages of the research. The consent was sought after the PME assessment process was completed by the HEI. The respondents were aware that the researcher had no involvement or influence on the assessment process. Maynooth University reviewed and authorised this research, as designed, prior to the commencement of any data collection processes.

Those registered students who did not provide consent were not included in the research. Participants were recruited voluntarily through a process of informed consent. The consent form clearly states that there is no compulsion to participate, the explicit purpose of the research, possible benefits and harm and clear explanations on the participants right to withdraw (Berg, 2004; Gall et al., 1996; Silverman et al., 2007).

Names of participants and location of professional practice were substituted with pseudonyms to protect the identity of each individual. Signed consent forms and actual sampled data were not kept together in the same location. Physical copies were stored under lock and key and digital copies were password protected, accessible only by the researcher (Silverman, 2006). All data gathering, processing and destruction was, and will be, conducted within the voluntary informed consent form procedures. This is consistent with General Data Protection Rules (GDPR) with a particular focus on informed consent, confidentiality, express purpose, anonymity and right to withdraw (BERA, 2011; Berg, 2004).

As with most research there were ethical dilemmas during the process. These included:

- The manner of latent inference employed in the QCA process
- Sampling decisions
- Selection of alternative lesson planning material for atypical respondent (N = 1/15)

In situations where ethically concerned methodological decisions had to be taken, I prioritised clearly rationalising the decision that I made and documenting the processes employed. The thinking on this was that I was explicitly recording both so that they can clearly be independently inspected.

The prioritisation of the pertinent ethical issues of informed consent and maintaining the anonymity and confidentiality of participants were not changed by the forced methodological change brought about by the Covid-19 pandemic. The need to move the focus group from the traditional face to face format to a remote online format maintained the same ethical considerations (Rodham & Gavin, 2006).

Sampling

Introduction

"Sampling and selection are principles and procedures used to identify, choose, and gain access to relevant data sources" (Mason, 2017). This study is exploratory in nature. Epistemologically it is interpretivist with the aim to explore the pedagogical understandings and practices of a selection of PST students at a HEI provider. It was important for the validity of the research and for alignment with QCA principles, that the sample used was one chosen because it potentially had the best chance to provide answers to the stated research problem. The employment of this sampling technique made it all the more important to explicitly explain the system by which the sample was chosen (Bell, 2010; Creswell, 2006; Elo et al., 2014; Krippendorff, 2018). It is also imperative to state clearly that the explorative nature of the research will not lead to universal knowledge claims in the findings chapter. At best the findings from this type

of sample have the potential for deep insight, due to the nature of the analysis, but the delimited nature of the study's scope would most likely warrant further study.

Sampling Design

Drawing from the above, the sampling method employed was a combination of convenience, voluntary and homogenous purposeful sampling (Blaxter, 2010; Creswell, 2006). The localised centre from where the sample was drawn was convenient to the researcher. Its intake is independently regulated by the *Higher Education Authority* (HEA) and the DES (O'Doherty & Harford, 2018). The documentary evidence being accessed had the potential to answer the research question fairly, a key concern of the content analyst (Krippendorff, 2018).

As with any ITE annual intake it was assumed that there would be many subpopulations within the year group. The potential sub-populations included:

- Gender
- Sexuality
- Ethnicity
- Age
- Professional practice school type
- Socio economic background
- Subject discipline

At an early stage in the research, it was decided not to limit the sample via these subpopulations. This decision was influenced by the scope of the research being undertaken. It is acknowledged that applying the same process individually to sub-populations could be an interesting expansion of this research.

The researcher was limited to the PSTs who decided to volunteer. There is a reasonable concern that those who volunteer may be the candidates who have received positive feedback from their supervisor or are generally positively disposed towards their progress through the programme. All reasonable ethical efforts were

made to encourage as high a percentage of participation as possible. Initially, the design had been to randomly select the sample from those respondents who indicated consent. I reflected on the exploratory nature of the research and the stated principles of QCA - to select a sample most likely to yield the sought data - and decided to modify the sample design. The decision was made to focus on those, who had consented, and who were graded in the top 20% of the academic year. This selected purposeful sample ensured that all volunteers within the homogenous group had the same probability of being included (Krippendorff, 2018).

The research design decision to sample those respondents who had been graded in the top 20% of the academic year was one influenced by the *QCA* tradition of seeking the data that is most likely to yield information rich sources pertinent to the research question (Bowen, 2009; Creswell & Poth, 2017; Elo & Kyngäs, 2008; Graneheim & Lundman, 2004; Hsieh & Shannon, 2005; Krippendorff & Bock, 2009; Mayring, 2014; Miles et al., 2018; Patton, 1999, 2002; Schreier, 2012). The assumption made here was that those who have achieved in the top 20% for their portfolio displayed a consistent commitment to the process of reflection and pedagogical development. They engaged most successfully with the different interwoven strands of the course and demonstrated this to their supervisor and tutor through this particular reflective vehicle. This sampling method also fit the research design more comfortably, as the nature of this research is explorative rather than evaluative. The purposive selection of these respondents potentially enabled the learning outcomes of the HEI to be observed in their most positive light.

Access

As mentioned above, this researcher is a former employee of a teacher education institution. This previous role enabled the researcher to rely on established lines of communication to formally request access to the required data. The researcher was aware of the key gatekeeper to the required data during the research design process (Blaxter, 2010). The formal letter of request for access is available at *Appendix A* at the conclusion of this thesis.

The second stage of gaining access to the data involved approaching the PME students. A copy of the PME Information letter and consent sheet is available at *Appendix A and B* at the end of this research. *Year 2* PME students were given complete freedom to choose to partake in the study, or not. Following the advice of Blaxter, a very clear purpose and overview of the research was supplied to the potential respondents. It was also clearly explained how the research could contribute to the teacher education process in the hope that a symbiotic purpose for the study would encourage higher participation (Blaxter, 2010).

Sampling Process

The sample Consent was obtained from a large percentage (70%) of the relevant student body. The researcher personally visited the PSTs in small groups during their *Year 2* tutorial time. This enabled the researcher to explain the purpose of the research intimately. It also enabled the PSTs to query aspects of the research in a smaller more comfortable environment (Creswell & Poth, 2017). A password protected spreadsheet of the consent forms returned was compiled by the researcher. This spreadsheet was shared with the data controller of the HEI who identified members of the sample who had been academically placed in the top 20% at the end of *Year One*. This amounted to 15 individuals, 6 male and 9 female. This gender spread is representative of the general population spread of the PME course in that particular year. Each participant was allotted a number, assigned alphabetically, and a pseudonym. These were created from a list of colours. Their school site was afforded a pseudonym drawn from a list of fruits. The subjects for which the PSTs were preparing to teach were added to this table published below:

No.	Pseudonym	Con 1	Con 2	School	Subjects
1	Mr Blue	Y	Y	Apple High	English History
2	Mr Green	Y	Y	Orange High	English History
3	Mr Black	Y	Y	Kiwi High	English History
4	Mr Brown	Y	Y	Melon High	Maths Geography
5	Ms Jade	Y	Y	Tomato High	English Geography
6	Ms Red	Y	Y	Banana High	English Music
7	Ms Lilac	Y	Y	Prune High	Geography CSPE
8	Ms Indigo	Y	Y	Apple High	Geography History
9	Mr Purple	Y	Y	Grape High	Music Cspe
10	Ms Yellow	Y	Y	Pear High	Business Acc
11	Ms Gold	Y	Y	Plum High	English History
12	Ms Silver	Y	Y	Peach High	English Irish
13	Ms White	Y	Y	Mango High	English Music
14	Ms Tan	Y	Y	Lime High	Geography History
15	Mr Grey	Y	Y	Lemon High	Chemistry Science

C Dooley 2019

Table 5.2: Respondents' Pseudonym Table

Formatting the Data for Analysis

Each PST student, as part of the submission process for their portfolio, had been asked to self-select six lesson plans from the course of the year which they were proud of, and which they thought represented their professional development through their placement practice. In the interests of enabling each PST to display their real pedagogical learning journey, these PST self-selected files were the lessons chosen for this analysis phase. An additional HEI requirement for the portfolio submission process

necessitated each PST student to prepare a school background description and an introspective study of themselves personally, and professionally.

In the single case where the PST did not identify their selected lessons, files were randomly chosen from Junior Cycle classes from either February or March, the latest months that were included in the portfolio. The decision to do this was informed by an assumption that later lesson plans potentially allowed the PST to show further pedagogical reasoning and development. In one other case the PST was teaching a percentage of Transition Year classes. It is a regular occurrence in Ireland for 1st Year PME students to be given Transition Year classes. It was decided not to omit these as Transition Year does not have a separate pedagogical framework to Junior Cycle. Ireland's Transition Year is known as an area where teachers can experiment with their individual course design. Again, it is assumed in these cases that general pedagogical reasoning and development would have informed the PST student as to their methodological approach in these classes.

The QCA Process

As has been explained earlier, the analysis framework used emerged from a detailed policy analysis explained in Chapter Four (above), combined with an integrated construct involving the 2012 PCK frame (Figure 3.5) and with Loughran's CoRes (Figure 3.6) construct.

The qualitative content analysis process of the PST's pedagogical understanding and practice commenced with an initial skimmed reading of the random sample employing the deductive framework, **Table 4.1**, (Bowen, 2009; Hsieh & Shannon, 2005). This opening reading employed the PCK lens to identify meaning units, (relevant passages or occurrences), in the text (Bowen, 2009; Erlingsson & Brysiewicz, 2017; Ryan & Bernard, 2003). This is in keeping with the principles of QCA's mixed procedure of category development. Initially a deductive framework, emanating from a comprehensive theoretical exploration which is connected to the purpose of the research was employed (Cho & Lee, 2014; Mayring, 2014; Ryan & Bernard, 2003). As

the analysis proceeded the categories were developed and reviewed using an inductive/circular process, (Mayring, 2019).

Lesson	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
PCK Features						
General Pedagogical stance						
Subject discipline conceptual understanding. Traditional beliefs and misconceptions						
Creating supportive learning rubrics and templates						
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning						
Consistent reflection and reasoning on and in practice. Consideration of learner's prior learning, capacity, context and competence						
NEW						

C Dooley 2019

Table 5.3: QCA Meaning Unit Recording Table

The initial QCA Meaning Unit Recording Table (above) was added to each individual's file. A separate space was left on each file for potential codes, categories and themes that could have emerged inductively during the QCA process. A sample of five random lesson plans was carried out to ensure that the lesson plan template employed by the HEI enabled the PST to represent PCK features that had been categorised previously from the policy analysis. It was sufficiently clear from the initial random sample that the structure of the template, though by no means a replicate structure, allowed for the process to continue.

It is important to acknowledge that these portfolios were not constructed with this current study in mind. As such all accessible data cannot be considered equally informative like it might in a controlled survey or questionnaire (Krippendorff, 2018). The process relied on the researcher's tacit knowledge and intuition to select those meaning units which were most relevant. It was also important to select appropriately in relation to the breath of a meaning unit. If it was too broad (many paragraphs long), it may have many meanings and if it was too narrow it had the potential to result in fragmentation (Graneheim & Lundman, 2004).

As codification and categorisation developed, meaning units and respondents were reorganised according to the inductive and iterative thematic developments (Graneheim & Lundman, 2004; Krippendorff, 2018). As they were extracted meaning units were condensed. This means that they were shortened while keeping their central meaning intact (Erlingsson & Brysiewicz, 2017). It was very important during this stage of the process to look for recurring exemplars of similar patterns, but also to remain open to disconfirming evidence and counterexamples, "trust your plausibility intuitions but don't fall in love with them" (Miles et al., 2014). If rare meaning units, which could influence the research question, were discovered it was always a possibility to have had to increase the sample size at this point (Krippendorff, 2018). There was also the potential to explore emergent inductive meaning units further in the third phase of the research.

Following the skimmed reading stage of the process, there was the potential for the condensed meaning units (relevant passages) to naturally begin to inductively develop and refine the established deductive categories. As strands and patterns emerged an inductive and iterative process was used to develop and refine categories or themes from the sampled data (Guba & Lincoln, 1994; Mayring, 2014; Ryan & Bernard, 2003). This employed the original analysis framework and was influenced by the emerging pertinent data; a process which honours the paradigm within which the research is undertaken (Bowen, 2009; Mayring, 2014; Miles et al., 2014). As the readings continued, clustering, synthesising, factoring and distilling processes were employed

to further inductively proceed toward common themes. At all times this synthesising process was driven by the purpose of whether the codes, categories and patterns were refining our understanding of the key questions posed (Miles et al., 2014).

The structure of the analysis

Step 1: Reading of the background to the school. The key points were extrapolated. Gender, location, school type, programmes offered, DEIS status.

Step 2: Reading of personal credo. Particular focus on the characteristics highlighted and the personal and professional principles adhered to.

Step 3: Reading of professional credo. Particular focus on a pedagogical/methodological stance which may influence interpretation of lesson plans.

Step 4: Reading of lesson plans one at a time adhering to the following process:

- Initial focus on outcome and intentions investigating their alignment and whether a clear learning purpose was established in advance of lesson?
- General reading of the script of lesson identifying the general pedagogical stance, values and beliefs identified by the teacher and learner activities
- Each successive reading highlighted elements of the plan which were pertinent to the established meaning units. This included supporting resources, style of teaching, purpose and rationale for practice, contextual awareness. **Minimum of three separate readings**.
- A separate reading sought what was not there or elements which might be construed as pertinent but not included in the meaning units.
- Final reading focussed on the reflective elements of the plan seeking rationale and reasoning for the planning, sequencing and implementation.

Step 5: Following step 4 for each of the six lessons review and reflect on the respondents' consistency of stance, understanding and practice.

Step 6: Update my data diary and return to stage 1

QCA Process of Abstraction

The extraction of the literal manifest content marked the completion of the initial analysis stage. Care was taken to ensure that the respondent's words were lifted verbatim from the lesson plans. Where an item, issue or concern was not seen to be manifest, I employed a separate text colour explaining what I understood from the latent content. This meant that non-manifest inferences or comments were clearly separated from the actual words of the respondents.

The next step was to begin the process of condensation. This involves shortening the text while preserving the core meaning (Krippendorff, 2018; Krippendorff & Bock, 2009). As I was completing the analysis in a digital medium, I employed a system of coloured text and highlights to affect this process. In order to differentiate the stages of analysis, all condensation and coding terms were added to the *Digital Analysis Suite* in capital letters.

Pedagogical Competence Sample Unit	Lesson 1 Rhythm	Lesson 2 The Orchestra	Lesson 3 Baroque Music	Lesson 4 Narrative
General Pedagogical stance	Facilitator, orchestrator, constructivist	Facilitator, orchestrator, constructivist, lecturer, discusser	Facilitator, orchestrator, constructivist, lecturer, discusser	Facilitator, orchestrator, transmitter, discusser
Subject discipline conceptual understanding. Traditional beliefs and misconceptions	Established beats of the notes and was looking to translate that into practical example so that students could witness their significance MEANING CONCEPTUAL THINKING SCAFFOLDING	Is deconstructing the discipline into its constituent parts. MEANING CONCEPTUAL THINKING SCAFFOLDING Attempting to scaffold appreciation of the complexity of the subject through visual representationMEANING CONCEPTUAL THINKING SCAFFOLDING	Considers key words and concepts before application of learning MEANING CONCEPTUAL THINKING SCAFFOLDING Trying to introduce modern music as a construct devolved from earlier genres MEANING CONCEPTUAL THINKING SCAFFOLDING DISCOVERY STRUCTURED	Considers key words and concepts before application of learning. Pre-defined dictionary of key terms CONCEPTUAL THINKING SCAFFOLDING
Evidence of creation of supportive learning rubrics, templates and scaffolding material	YouTube, Whiteboard, copies, worksheet, coffee cups. Identification of key words/terms Worksheet created for homework TRANSMISSION REINFORCEMENT	PowerPoint, Show Me Boards, copies, violin, graphic organiser	YouTube, Whiteboard, textbook, copies, worksheet,	PowerPoint, Worksheets, YouTube, Whiteboard, Copies Created her own visual film reel as a model and exemplar to encourage learners MEANING CONCEPTUAL THINKING SCAFFOLDING DISCOVERY STRUCTURED ICT
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning	Found an unusual YouTube clip which highlighted rhythm in our everyday lives SCAFFOLDING CONCEPTUAL THINKING DISCOVERY	Note taking, graphic scoring, questions and group work Visual line rider representation of Beethoven's 5th SCAFFOLDING CONCEPTUAL THINKING DISCOVERY	This teacher is breaking down the discipline into its constituent parts. It is unknown if she is communicating a purpose to the learners as to why she is doing that MISCONCEPTION UNSUPPORTED SUBJECT KNOWLEDGE Note taking, think pair, share, listening, performing, discussing.	Mentions intrinsic motivation in connection to engaging students in relating personal experience MEANING CONCEPTUAL THINKING SCAFFOLDING DISCOVERY STRUCTURED Students took notes from the PowerPoint slides MISCONCEPTION PASSIVE LOWER ORDER TRANSMISSION Used real world examples instead of relying on past exam examples CONCEPTUAL THINKING SCAFFOLDING DISCOVERY STRUCTURED Students created film reels incorporating and applying the technical learning absorbed ICT
Consistent reflection and reasoning on and in practice. Consideration of learner's prior learning, capacity, context and competence	Pitched the objective of the class above the capacity of the students Realised that there was a need to consolidate the learning before moving on to its application. Tried to move the learning too fast. Could have benefitted from a smaller scaffolding task first MISCONCEPTION UNSUPPORTED SUBJECT KNOWLEDGE	Homework tasks were differentiated according to capacity. DIFFERENTIATION Review of former learning at the start had a positive impact REINFORCEMENT Unfortunately got a little lost by discussing Beethoven's history SUBJECT KNOWLEDGE Visual representations of the music is a very complex task for this age group CONTROL	Differentiated work groups were employed It was particularly useful that students had worked with timelines in history which enabled them to grasp the concept more readily. CONCEPTUAL THINKING SCAFFOLDING DISCOVERY STRUCTURED Realised that timing was a considerable issue. Looking to manage too much in one lesson. Realises that "clearly stating" the sought musical elements from the listening exercise. Potential for predesigned worksheet here MISCONCEPTION UNSUPPORTED SUBJECT KNOWLEDGE	Could students answer the initial question about favourite film without some rubric or structure edging them toward the learning intention? MISCONCEPTION UNSUPPORTED SUBJECT KNOWLEDGE Was this question appropriate for a think pair share? TASK EXCLUSIVE CONTENT KNOWLEDGE MISCONCEPTION PASSIVE LOWER ORDER
Extra Comments leading to potential new or expanded meaning units	Learning intentions slightly misaligned MISCONCEPTION UNSUPPORTED Questioning and observance of performance will be used for the learner to demonstrate learning	S.O.L Learning outcomes and intentions seem to be well conceived Questioning and observation STRUCTURED	S.O.L Learning outcomes and intentions seem to be well conceived STRUCTURED Questioning and observation A contributing factor to the timing issue could be a reliance on a dialogical style of teaching in order to convey the central message of the lesson. Could more individually tailored cloze test type scaffolding materials focus the learner and the lesson and enable a more organised progression? Only if the clear learning purpose of the lesson is established in advance. MISCONCEPTION UNSUPPORTED SUBJECT KNOWLEDGE TRANSMISSION ??	Use of learning verb understand. Success criteria are a rewording of the intentions. TASK EXCLUSIVE CONTENT KNOWLEDGE MISCONCEPTION PASSIVE LOWER ORDER Questioning observation and group work Board work. One student could be recording secretary of learning creating something on notes, padlet, show me and this could then be shared with the entire class via a VLE?? ICT????

Table: 5.4 Example of 6 Lesson QCA with emerging meaning units

As I worked through the different respondents, new meaning units emerged. Meaning units began to duplicate and as this occurred, they evolved into codes. At the end of the process, despite employing broad codes to aid synthesis, the number of individual codes had reached twenty-one. As new units emerged previously completed portfolios were revisited in order to review whether previously labelled data should be changed.

Thematic Key

15 November 2019 08:30

FEEDBACK	
ICT	
REINFORCEMENT	
CONTROL	
DIFFERENTIATION	
MISCONCEPTION	
DISCOVERY	
SCAFFOLDING	
STRUCTURED	
CONCEPTUAL THINKING	
SUBJECT KNOWLEDGE	
CREATIVITY	
MEANING	
EXAM FOCUS	
UNSUPPORTED	
LOWER ORDER	
TASK FOCUSSED	
PASSIVE	
TRANSMISSION	
TEXTBOOK	
COGNITIVE KNOWLEDGE	

Table 5.5 Meaning Unit Development

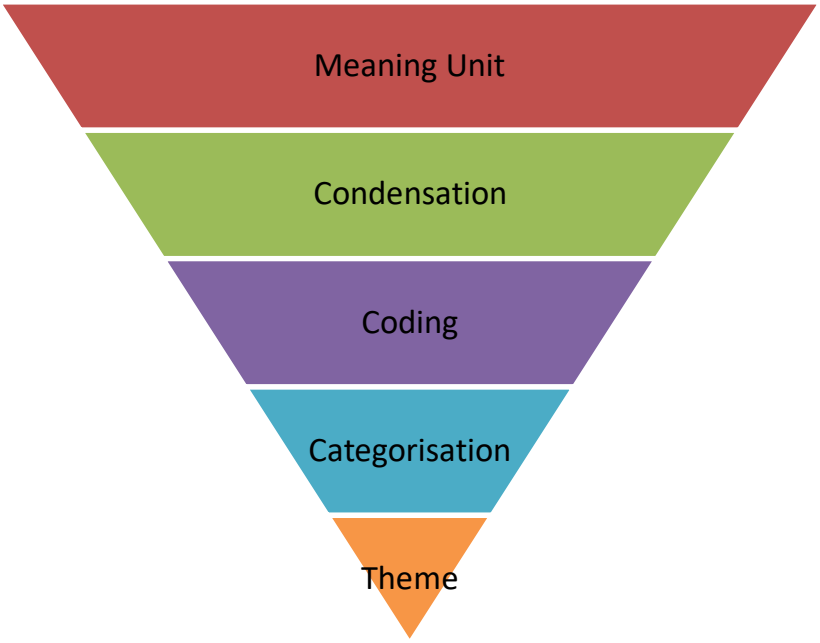


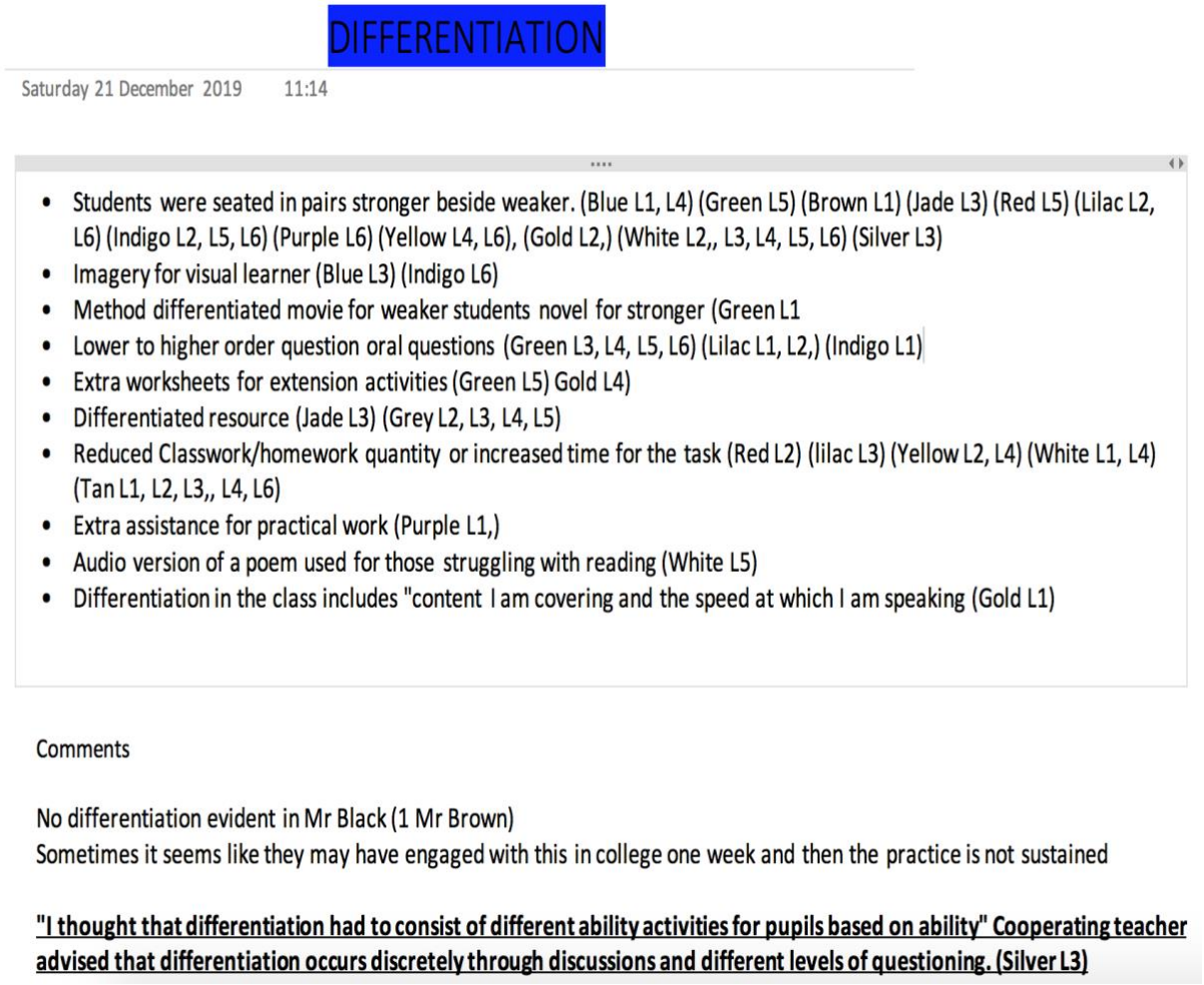
Figure 5.6: Condensation Process

Theme	Lower order Cognitive transfer Transmission Recitative answering	Theory vs Practice Integration Obstructive factors
Code	Transmission	Practice site influence
Condensed Meaning Unit	Students should state	Cooperating teacher advice
Literal Manifest Content Meaning Unit	"Students should state that the annual precipitation level is 400mm" Ms Lilac	"I thought that differentiation had to consist of different ability activities for pupils based on ability" Cooperating teacher advised that differentiation occurs discretely through discussions and different levels of questioning. Ms Silver

Table 5.7: Sample Manifest to Theme

Once the twenty-one codes had been isolated, I began to move the data from the respondent's files to the thematic files. This process allowed a natural inductive construction of the emerging data. This process also aided my familiarity with the data. Analysing each of the ninety lessons for each of the twenty-one lenses gave ample opportunity to begin to see correlations between pedagogical understandings and practices displayed by respondents. I continued to focus on the words of the respondents and where appropriate included them into the thematic pages. As repetitions were found among respondents, I organised them on the thematic page together. This proved useful for the amalgamation of codes creating potential opportunities for synthesised presentation of findings.

During this synthesising process, two of the twenty-one codes were assimilated as their meaning was discovered to be too close to two of the others. *Assessment for Learning* (AFL) was subsumed by *Feedback*. *Exam Focus* was subsumed by *Task Focussed*. This process of code subsuming is in keeping with the work of master QCA proponents (Mayring, 2014).



DIFFERENTIATION

Saturday 21 December 2019 11:14

- Students were seated in pairs stronger beside weaker. (Blue L1, L4) (Green L5) (Brown L1) (Jade L3) (Red L5) (Lilac L2, L6) (Indigo L2, L5, L6) (Purple L6) (Yellow L4, L6), (Gold L2,) (White L2,, L3, L4, L5, L6) (Silver L3)
- Imagery for visual learner (Blue L3) (Indigo L6)
- Method differentiated movie for weaker students novel for stronger (Green L1
- Lower to higher order question oral questions (Green L3, L4, L5, L6) (Lilac L1, L2,) (Indigo L1)
- Extra worksheets for extension activities (Green L5) Gold L4)
- Differentiated resource (Jade L3) (Grey L2, L3, L4, L5)
- Reduced Classwork/homework quantity or increased time for the task (Red L2) (lilac L3) (Yellow L2, L4) (White L1, L4) (Tan L1, L2, L3,, L4, L6)
- Extra assistance for practical work (Purple L1,)
- Audio version of a poem used for those struggling with reading (White L5)
- Differentiation in the class includes "content I am covering and the speed at which I am speaking (Gold L1)

Comments

No differentiation evident in Mr Black (1 Mr Brown)
Sometimes it seems like they may have engaged with this in college one week and then the practice is not sustained

"I thought that differentiation had to consist of different ability activities for pupils based on ability" Cooperating teacher advised that differentiation occurs discretely through discussions and different levels of questioning. (Silver L3)

Figure 5.8: QCA Thematic Synthesis Process

In table 5.8 the process of compiling the manifest and the latent under the codes can be seen. The pseudonym and the lesson number were used as identifiers so that I could cross reference the occurrence with the data source and the data diary. Once a thorough search for any reference to each of the codes had been compiled, the next stage involved searching through each of the completed code compilations to see where synthesis between codes might occur.

Code	Explanation	Sought Pedagogy
Meaning	Explaining the unknown with the known. This can be both concrete and abstract unknowns	Analogies, Imagery, Exemplars, Thought provoking questions.
Feedback	Advising the learner of where they are, where they are going and what the specific next steps are?	Use of connected learning intentions and success criteria. Self and peer assessment. Methods such as traffic lights, exit cards. Surveying learners. Diagnostic assessment.
Reinforcement	Facilitating opportunities for the learner to revisit previous learning.	Linking prior learning. Opportunities for application of learning into later activity.
ICT	Using ICT to promote digital learning which deepens or enriches the learning experience	Independent research. Augmented reality. Gamification. Creation of content by the learner. Collaboration. File sharing.
Differentiation	Providing appropriate challenge for all learners.	Differentiate by task, resources, time, group, support
Control	Clear purpose, planning and preparation. Classroom routines, structures established.	Pre-empting potential issues. Clear focus on interest and engagement
Discovery	Discovery learning or learning by experience.	Devising focussed activities and experiences which scaffold independent learning.
Misconception	Practitioner mismatch between theory and practice	(EX)Constructivist theory matched with transmission practice.
Scaffolding	Devising structured visual, digital, organisational supports for learning	Graphic Organisers, Templates, Focus questions. Co-construction of success criteria
Structured	Link between practitioners knowledge of where learners are at and where they are going.	(Ex) Learning outcomes translated into meaningful learning intentions.
Subject knowledge	Knowing discipline really well. Links to current affairs. Awareness of learners' capacity	Pacing. Acknowledgement of prior knowledge of learners. Confidence in open learning environment
Conceptual Thinking	Subject discipline thinking interrogated and deconstructed for learner	Deconstructing abstract concepts. Explicit learning intentions
Unsupported	Unrealistic expectations of the learners held by practitioner. Methods deployed without theoretical understanding	No worksheets. Lack of directions or instructions. Little connection between learning outcomes and intentions
Creativity	Evidence of practitioner anticipating a learning problem and devising a personal solution cognizant of learner and context	Devised an acronym or an analogy. Created a game or a video or an image Created support materials
Lower Order	Significance or purpose lacking in learning intentions. Lack of appropriate challenge.	Recitative answering. Exclusively closed/leading questioning. Copying notes or diagrams
Task Focussed	Little or no explanation of the purpose, context, sequence, connectivity, significance of the learning.	Students are directed to do a task without success criteria or understanding how that task contributes to their disciplinary understanding
Passive	Students active but not engaged in the learning process	"Covering" of content, dominating teacher voice, transcribing, copying. Watching and or listening with no focus.
Transmission	An erroneous over focus on covering subject knowledge rather than exploring potential disciplinary outcomes	Students listen, watch and take down. Content is "covered" or "delivered" or "gone through" or "gone over"
Cognitive Knowledge	A major focus on coaching content regurgitation	Rote learning and regurgitation Recitative answering
Textbook	Textbook used as "the" resource instead of as "a" resource	Unfocussed and purposeless reading and highlighting equated with learning

5.9: QCA: Coding units explained

Validity and reliability

All stages of the inference process employed were clearly documented so that the process could be understood and even replicated by third parties. As mentioned above, a diary was created detailing records on sampling rules, analysis rules and evaluation criteria (Cho & Lee, 2014; Creswell & Inquiry, 2007; Guba & Lincoln, 1994; Ryan & Bernard, 2003). Original quotes from the sample documents were included when latent inferences are made by the researcher, either in the body of the dissertation text or in an appendix, so that consumers of the research could clearly follow variations of message content and explicit methodological choices (Berg, 2004; Ryan & Bernard, 2003). The provision of a clear and explicit audit trail in a diary provides the opportunities for others to explore and challenge the methodological processes employed by the researcher.

Additional QCA Process: The Credo

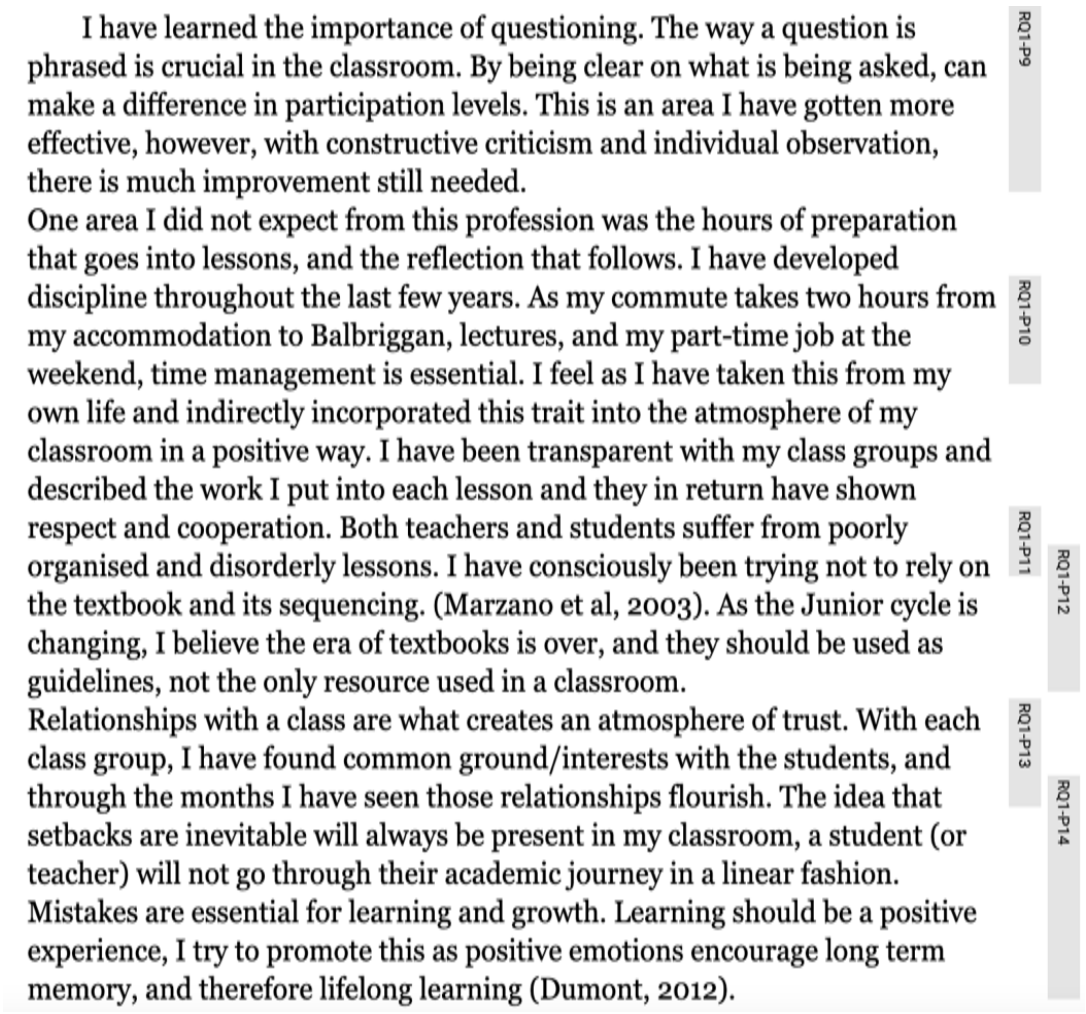
While in the process of extracting the latent and manifest, and engaging in the categorisation process, it became apparent that the 'Credo' documents warranted a more substantial involvement in the *QCA* process of this research. Initially, the plan had been to use them as a contextualising document to create a backdrop to the respondent's planning and reflections. In conversations with my supervisor, the potential for these documents to also be analysed in a separate, but aligned process, came to light. Considering I am a novice researcher, with no previous *QCA* experience, I decided to avail of the opportunity to introduce a further validity measure into the research. I had been exposed to *MaxQda* during my studies and was interested to discover whether there was a similar program available for *QCA* analysts. The thinking process behind this was, that if I followed a systematic computer program which forced the researcher to abide by rules formulated by more experienced *QCA* researchers, the product could complement existing findings, while also acting as a verification process for what had been performed manually.

I discovered *QCAMap*, a program developed by Philip Mayring and his team in Austria (Letz, 2020). The program has been used in over twenty thousand projects since 2013

(Mayring, 2020). Together with seminal QCA writings by the programme's creator (Mayring, 2014, 2019), I also followed a 'Step by Step' instruction manual as to how to effectively and accurately use the program (Mayring, 2020). The first step followed was to redact the relevant texts and import them into the program. These texts were written by the respondents to this study between February and March of their first PME year. The title given to their written response was '*My Development as a Teacher*'. Within the document there were three distinct questions which each PST had to respond to:

1. What have you learned about yourself as a person during this placement?
2. What have you learned about yourself as a teacher during this placement?
3. Take ONE theory you learned from any lecture that resonated with you and describe in detail how/why it made a difference to your teaching and ultimately to student learning.

The next step was to initiate a general reading of the entire combined document. In this general reading sections of the text presented as being pertinent to the research and repetitions of similar responses were apparent. I began highlighting pertinent sections of text and adding paraphrases to those sentences. Whenever there was a latent inference about the context of the manifest it was put in brackets.



5.10: The Paraphrasing Process QCAMap

Once that process was finished for the entire text, I began the process of 'generalizing' which is the reduction process of *QCA*. This reduces the text while maintaining its explicit meaning.

5.11: The Generalisation Process QCAMap

Once that process is completed you can establish robust codes which represent the central concerns of the respondents as represented by the latent and manifest content of the text.

RQ1-G1:Barrier	RQ1-R1:Circumstances which increase challenge of program
RQ1-G2:Teacher Focus	RQ1-R2:What other teacher knowledge do PMEs focus on outside pedagogical concerns
RQ1-G3:Prior experience and beliefs	RQ1-R3:How do prior beliefs and experiences influence what is written in the credo
RQ1-G4:Differentiation	RQ1-R4:What differentiation concerns are profferred?
RQ1-G5:Pedagogical consideration	RQ1-R5:What evidence is there of pedagogical thinking and action?
RQ1-G6:Reflection	RQ1-R6:How is the practice of reflection reviewed?

5.12: Following the reduction Phase QCAMap

One final reading of the document was then conducted to query whether a category, omitted at the commencement, was worthy of inclusion.

Summary

This section details my deliberation over qualitative research paradigms and my decision to adopt an interpretivist stance in conducting this exploratory research. The origins and rationale for the employment of particular sampling methods were detailed explaining the sampling processes alignment with the chosen methodology. The *QCA* process used to manually analyse the PST portfolios was traced in detail so that third parties can clearly see a step-by-step procedure. The process and level of abstraction followed with clear exemplars of each stage of the categorisation process included for consumers of the research to interrogate. More detailed exemplars are supplied in the appendices section. Finally, validity and reliability concerns and issues were discussed.

The final section outlined the complementary process of analysing the *Credo* reflections of the PST respondents. This stage was not originally in the research design. Its inclusion provided another data set to synthesise and triangulate, but also gave an opportunity to employ a computer program. This digital process was used to provide oversight to the manual process employed earlier. The computer program forces researchers to follow a rigidly systematic process of abstraction facilitating further attention to the manual process undertaken.

Phase 3: Focus Groups

Methodological Rationale

This section begins with a rationale for the employment of *Focus Groups* as a further qualitative data collection method for this research. A *Focus Group* is methodologically faithful to the research design, in that it is traditionally employed when there is a particular issue being focussed on, and that it honours the social reality and perspective of disparate individuals (Bell, 2010; Mason, 2017; Rea & Parker, 2012). It is also traditionally employed with groups of people who have similar characteristics or experiences, in this case all performing well with their reflective professional portfolios (Bell, 2010). This third qualitative data collection method contributed to a more

comprehensive description of the sample's pedagogical reasoning and enactment across the two years of their PME programme.

There were also a number of other methodological reasons for employing *Focus Group* interviews. They had the potential to investigate the themes emerging from the analysis of the reflective portfolios, facilitating the respondent sample with an opportunity to expand and clarify what had been written one year earlier. They examined and validated assumptions made by the researcher by drawing out latent inferences in the texts from **Phase 2**. This data collection method was also employed to afford the opportunity to the respondents to engage without the 'assessment audience' influencing their contributions. Finally, the method afforded the potential for triangulation supporting or disputing findings from the portfolio analysis stage. Triangulation is a confirmation process employing data collection methods with different strengths that complement each other (Miles et al., 2014). The dependability of findings tends to be considered more reliable when they have been confirmed from more than one data collection method. This process also diminishes researcher bias (Cho & Lee, 2014; Graneheim & Lundman, 2004).

Throughout this research process I have acknowledged that the enactment of PCK is complex and technical. The language and practice are challenging to an established teacher. This research focusses on pre-service practitioners. Methodologically the research design needed to be cognizant of this. *Focus Groups* have the potential to encourage participation by unsure respondents who might be reluctant to contribute via 'one to one' methods (Creswell, 2006; Kitzinger, 1995). This is referred to in the literature as 'the loosening effect' (Byers & Wilcox, 1991; Hillebrandt, 1979). Clear definitions and explanations, free from leading connotations, were shared with the participants in advance so that they could be made feel as comfortable as possible and to reduce the potential sense of being evaluated or examined. These documents can be found at Appendix C.

It was important for the researcher to be acutely aware that the 'loosening effect' of *Focus Groups* can also have unintended consequences. It requires a skilled facilitator

who is constantly aware of the potential of individuals to dominate the conversation, while others employ conformity to avoid the spotlight (Blaxter, 2010; Creswell, 2006). One of the strategies employed here was to ensure a gender and age balance in the group selected. It is not fool proof as it does not take into account personality types, but it does consider potential feelings of under-representation (Hayes, 2000). Also, all participants were afforded an opportunity to speak on each and every question.

Style of Focus Group

A qualitative semi structured open style was employed to invite the participants to contribute additional pedagogical understandings and practices from their lived experience, which they may not have had the opportunity to include in their professional portfolio. This is in keeping with the selected research design and paradigm (Mason, 2017). Questions were edited, tested and filtered so that as far as was possible they could not be construed as leading, presumptive or offensive by any individual respondent (Bell, 2010). Open questions, or thematic phases, were employed, influenced by the emergent themes from **phase 2.** The intention was to facilitate the respondents with an opportunity to "free associate' on their pedagogical reasoning and judgement, creating a 'conversation with a purpose' (Kitzinger, 1995; Mason, 2017).

The following table outlines the significant queries which emerged from the data diary constructed alongside the analysis process of the PST's portfolios. These were areas where partial statements or practices were referenced in the portfolios which warranted clarification and further exploration. This was clearly influenced by the chosen framing of PCK and its enactment and the results of this research's policy analysis stage.

Considerations Themes	Depth/Breath	Scope	Sequencing	Consensus Rate
Reported personal barriers to success				
Challenges to complex integration of theory and practice?				
Understanding of unpacking Learning Outcomes to create Learning Intentions				
Influence of textbooks and terminal examinations?				
Support from mentors at placement site? Support from HEI?				
Opportunities for moving beyond "tips and tricks" methodologies?				
Pedagogical experience of teaching a practical subject (concrete) versus teaching an academic (abstract) one				
The influence of the Year 2 Teaching placement site				
Opinions on the effectiveness and authenticity of portfolio writing?				
Correlation between subject knowledge, confidence and need for control?				
Understanding of active learning?				

5.13: Planning considerations for Focus Group Facilitation

The focus group was initially planned to be held in a place and at a time convenient to the fifteen sample respondents (Bell, 2010; Byers & Wilcox, 1991; Kitzinger, 1995). This was to be a physical meeting in the institution where they study, at an agreed block of free time in the timetable of the fifteen sampled respondents. Due to the Covid-19 pandemic, this proved impossible. Many PSTs returned to their family homes and proved uncontactable. The focus group was moved to an online setting. (N =6/15) agreed to take part. Each of the sample who replied to my communication had an institutional *Office 365* account. For their convenience, and the collective data protection and security, *Microsoft Teams* was employed. This platform (2020) enabled nine individuals to be visible on the screen at any one time. One confirmed respondent pulled out the night before due to last minute supervision commitments at his school placement. This respondent agreed to provide written answers in the form of a survey.

The same questions were asked of this respondent as of those who took part in the Focus Group. Of the remaining five confirmed participants, two chose not to enable their video function. This did not hamper their ability to contribute using the audio function exclusively. However it did limit the non-verbal and social contextual cues in their interactions with the other respondents and the moderator (Schneider et al., 2002; Woodyatt et al., 2016).

Every effort was made by the researcher to employ a style, language and demeanour which impressed on the respondents their worth, his immediacy, and the clear purpose of the meeting (Mason, 2017). Active listening was employed with notes taken as an aide memoire on nonverbal cues. The employment of video recording within *Microsoft Teams* ensured my complete focus and concentration on the contribution of the interviewees as I was able to review the recorded audio and video material multiple times following the event (Blaxter, 2010). The design aimed for and achieved a maximum of 10% interviewer talk.

Potential weaknesses of this method

As with all qualitative methods there were potential weaknesses with *Focus Groups* which had to be considered throughout the process. The intended respondents are novice practitioners. Their pedagogical practice is emergent. As such they may not be able to verbalise what is a complex integration of theoretical and practical knowledge (Mason, 2017). It was important that in this context anecdotes, analogies and even humour are valued and employed by the researcher (Kitzinger, 1995). Generally, it is suggested that it is challenging in this style of interview to be a neutral data collector. Every effort was made to be reflexive on spoken and body language, cognisant of how they could influence the social interaction nature of the focus group (Mason, 2017).

There were reservations in relation to moving to an online format. The removal of overt social context and non-verbal cues were particularly concerning (Schneider et al., 2002; Woodyatt et al., 2016). In practice the respondents seemed to settle into the format remarkably quickly. There did not seem to be hesitation in articulating opinions and there were numerous occasions where the participants expanded on their

colleague's responses without being prompted to do so. Potentially the respondent's ability to contribute from the comfort of their own personal surroundings made them feel more at ease through the process.

Data Analysis Process

In relation to interviews and the *Focus Group,* this researcher relied on theme identification methods as formulated by (Braun & Clarke, 2006; Cohen et al., 2007). After transcribing interviews in rough text form, i.e. without coded descriptors (Shagoury & Power, 2012), the content was analysed for frequent modality of terms used by the respondents. The semi-structured nature of the discussions assisted in making over-arching topics more manageable. In order to maintain accuracy of meaning and intonation the transcription symbols promoted by Silverman were employed during transcription (Silverman, 2006). The themes identified in this process assisted the researcher to identify the sub-themes which in turn provided the framework for reporting findings in Chapter 6.

Summary

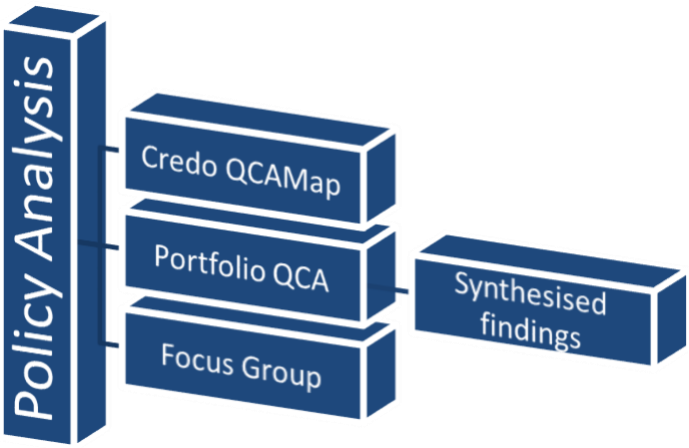
This section began with a discussion of rationale for employing this particular qualitative methodology over potential alternatives such as interviews or surveys. The researcher's style when facilitating the *Focus Group* was then outlined. Themes and areas of interest largely emanating from the *QCA* process earlier in the research were then detailed; clearly framing the purposes of the semi-structured conversation. The potential weaknesses and the issues which the researcher was mindful of during the event were then discussed.

Chapter 6: Findings

Introduction

This study initially set out to identify recent educational policy conceptualisations in terms of the kinds of pedagogical understanding and practices expected of teachers at lower secondary level in Ireland. The findings of this policy analysis were described and discussed in Chapter 4, and these are quickly reviewed in the next section. The next step, the subject of this chapter, was to examine the extent to which understanding and enactment of these pedagogical skills and proficiencies was evident in the documented preparations and reflections of a cohort of Irish pre-service practitioners in an ITE programme. The PCK investigative focus (Figure 4.1) was employed to frame the analysis for both the QCA portfolio and *Credo* analysis. Upon completion of this analysis, themes were identified inductively, and these informed the structure of the Focus Group.

In describing these findings, the research aims to remain cognisant of both the micro and macro individual and systemic practices and influences which may contribute to the shaping of the reported experiences, and this will be further explored in the discussion chapter.



6.1: Process of Analysis

This chapter will present the findings from the analysis of the *Credo* documents, the PST's reflective portfolios and the Focus Group. Portfolios were the primary means by which each first year PME in this study formally recorded their thinking processes in planning, preparation and practice and their reflections on the same. Whilst there are limitations of data yielded by portfolios, as discussed in Chapter 3, this study opines that portfolios can also, at their authentic best, be a scholar's window to the PSTs struggle with the complexity of integrating pedagogical theory with practice in teaching. Undertaking supplementary analysis of the 'Credos' and the conducting of a Focus Group with a sample of the PSTs, whose portfolios, and credos from year 1 had been analysed, aimed to both support the triangulation of findings from earlier sections of data analysis and to enable a deeper understanding of the themes identified in the first phase of the research, alongside students' progression.

Distilling Sought Pedagogical Proficiencies in Policy

Chapter Four of this research investigated and analysed how pedagogical understandings and practices are conceptualised in the most recent generation of teachers' role descriptive policies in Ireland. The investigative focus depicted at Figure 4.1 represented key elements of PCK, both for theoretical comprehension and enactment principles. It emerged from the PCK work of Shulman (1987; 1986) Gess-Newsome (1999) and Loughran (2012; 2004; 2008). It focusses on the contextual considerations, the practitioner's disposition and the pedagogical proficiencies which are central to a PCK engaged practitioner. The Analysis Table (Figure 4.2) emanated from 4.1 and was employed as the central lens by which the policy analyses were conducted. This focussed the policy analysis on fundamental pedagogical features comprehended by the policy and its makers.

In response to **Research Question 1**, the analysis revealed that these policies looked for profound change to what has consistently been reported as persistent conservative pedagogical practice of previous teaching generations. This reported teaching practice generally positioned Irish teachers as "imparters of knowledge" and Irish learners as "passive recipients". In the new junior cycle curriculum, the learners were instead

positioned as central, not peripheral, to the learning process. Those policies reviewed in Chapter 4 sought learners to be authentically and meaningfully engaged in their own education process by pedagogically skilled and adaptable teaching practitioners. What appeared to emerge from the analysis of the policies is a desire to develop teachers whose educational orientations and dispositions are constructivist in nature and approach.

On conclusion of the analysis the following key pedagogical thematic considerations emerged consistently from the pertinent policies.

- There is a focus on pedagogical dispositions, values and beliefs. The policies look for a pedagogical orientation which steers away from an exclusivity of 'teaching as telling' and 'learning as listening'.
- Pre-Lesson pedagogical deliberations are foregrounded. The policies advocate for practitioners to invest heavily in the purpose, intention and structuring employed in the lesson planning process.
- Employment of reasoned pedagogical approaches/Instructional techniques which take into account the purpose of the lessons and the different learners' capacities in the learning context are a key role of teachers' practice.
- Engagement in individual and collaborative reflective practice which involves theoretical research, and discussions on prior craft experience, with the purpose of refining and improving practice is the primary method of professional development available to the profession.

The external contextual factors influencing reasoned pedagogical understanding and action by the PSTs are considered throughout the process. This theme investigates the personal and the systemic factors which both assist and obstruct the PSTs in their development of this policy looked for pedagogical practice.

Methodological Approach

The purpose of this research was not to evaluate an ITE programme. The sample was chosen and refined to only include those respondents who were confirmed as placed in the top 20% academic performers overall at the end of year 1 of the PME. The sample is not an average representation of those enrolled in the course. Each respondent (n = 15) self-selected, and each submitted the lessons (n = 6) which *they* believed best told the story of their development as a teacher. These exemplar lessons are what were analysed for this phase of the research. The methodological thought process was that this sampling technique presented the best opportunity for pedagogical understanding and practice of the programme's best performers to shine through.

In addition to the self-selected lessons, (n = 90), each PST presented a social and historical background of their placement school. They also submitted a formal essay which focussed on their "*Development as a Teacher*", both personally and professionally *(Credo).* Both of these documents were originally analysed with the purpose of providing context and background to the individual lesson plans. In all one hundred and twenty individual documents were analysed, eight from each individual respondent. A later methodological decision necessitated a further in-depth analysis of the *Credo* documents using a digital QCA programme called QCAMap.

The findings are presented below following a thematic format. Each theme contains relevant data under the three main data collection processes: 1. The *Credo* analysis, 2. The portfolio analysis, 3. The Focus Group. These themes have emanated from three major influences. Firstly, the theoretical and enactment frameworks of PCK, the influence of this study's literature review specifically on the influence of values, beliefs and complex reflection and the inductive learnings from the respondents' responses as the data collection process progressed.

Credo findings

The *Credos* of the PSTs consist of three formal essay style responses which focus on their "*Development as a Teacher*", both personally and professionally, and their critical evaluation of a particular educational theory, which they had engaged with at university, and hoped to enact during school practice. Thematically the presentations of the findings from all stages of the qualitative research are presented adhering to the same organisational structure. As mentioned above this structure represents the dominant themes from the key influences on this study.

Pedagogical Dispositions, Values and Beliefs

Many of the respondents clearly acknowledge that the influence of their prior pedagogical knowledge and experience as a learner is significant in relation to their attitude towards teaching style, learning capacity and student profiles. Mr Grey acknowledged that he initially went into teaching with the assumption that he was there to teach the 'nice' and 'engaged' students while just dealing with the 'troublemakers' so they don't hinder the learning of the 'good' students (Mr Grey, *My Development as a Teacher*). Mr Blue reflected that "how we teach and the style of work we gravitate towards instinctively often mirrors the type of person and the style of education we ourselves liked and gravitated towards" (Mr Blue, *My Development as a Teacher*). Having empathy for the student's perspective (Ms Lilac) and providing a wide range of resources for different types of learner (Mr Black) were some of the actions and attitudes influenced by prior experiences, dispositions and beliefs.

The idea of following a content transmission style of teaching is also dismissed regularly in the respondents' *Credos*. It is claimed that the "panic and rush to cover everything I had prepared" has given way to "checking in on the student's progression, rather than getting through material" (Ms Yellow, *My Development as a Teacher).* Mr Black establishes himself as opposed to what Freire called '*The Banking Model of Education*" where students are described as a medium for receiving, filing and storing the deposits of information transmitted by the teacher. Student centred, (Mr Grey, Mr

Brown, Mr Purple, Mr Black, Ms Gold, Mr Green, Ms Red, Ms White), facilitation, (Mr Blue, Ms Indigo) and scaffolding methods (Ms Gold, Ms Indigo, Ms White), are purported to be the pedagogical dispositions and values favoured by the majority of the respondents.

Pre-Lesson Pedagogical Deliberations

"Apathy occurs instead of learning if I am not prepared"

Ms Jade: *My Development as a Teacher*

Congruent with the opinion of Ms Jade, preparation is mentioned as being key to the success of the lessons by most respondents. Contrary to the contextual and the learning intention focus of *Figure 4.2* major pre-lesson concerns tend to focus more on the volume of material to 'cover' in a particular class. Some respondents report struggling with preparing for time management (Ms Silver, Ms Red, Mr Black, Ms Gold), and "knowing how much work I would get done" (Ms Red, *My Development as a Teacher).* "I sometimes feel that I give too much information which results in the students not processing as much as they would" (Ms Silver, *My Development as a Teacher),* and "I rushed to cover everything I had prepared…getting through material (Ms Yellow, *My Development as a Teacher).*

Another major pre-lesson concern that the PSTs encounter at this stage of their career is the extent of their substantive and syntactic subject knowledge. Although one PST explicitly stated that he was delighted to find that he did know his subject very well (*Mr Purple).* Others are significantly less confident (Ms Yellow, Ms Lilac, Ms Indigo). "There have been countless times in which the students ask me questions that go beyond the content discussed in the lessons that I have been unable to answer" (Mr Green, *My Development as a Teacher)*. The lack of experience in being able to predict where a teenage mind might be interested to redirect a topic, together with emergent subject content knowledge, hinders the pedagogical practice of some of this group of PSTs. Their lack of experience could potentially also prevent them from readily admitting to their students that they do not know everything or leveraging the unknown as a further potential learning experience.

Pedagogical/Instructional Techniques Rationale

The favoured dispositions listed in the *Credos* often include specific learner centred strategies that the PSTs have tried or would like to try while in the classroom. Laudable wishes such as facilitating student misconceptions (Mr Brown), hooking their interest with relatable learning (Ms Red, Mr Brown, Mr Green, Ms Silver, Ms White), and focussing on skills (Mr Purple, Ms Indigo) are mentioned as preferred strategies, but only in broad non-specific terms. "Learning should be a positive experience, I try to promote this as positive emotions encourage long-term memory and therefore life-long learning" (Mr Brown, *My Development as a Teacher).*

Employing strategies to make sure the learner is 'active' during the learning activity is a pedagogical concern/rationale reported by the PSTs. Citation of Dewey's (1928) 'Progressive Education' is used as a support to a "hands-on practical approach" (Mr Purple, *My Development as a Teacher).* Practical approaches are referred to by Mr Purple, Ms Lilac, Ms Red, Ms White, Ms Yellow, Mr Grey, Mr Brown. When the facilitation of the learner's 'activity' is more questionable, it is employed to 'keep them on task" (Ms Indigo) or referred to as material "being covered" (Ms Tan, Ms Yellow). When it is included in the reflection in a more progressive manner, the PST refers to scaffolding strategies which employ sourced visual and structural scaffolding resources (Ms Gold, Mr Green, Mr Purple, Ms Indigo). It is about student "involvement over instruction" (Ms Yellow, *My Development as a Teacher).* Disillusionment with the textbook as the only resource in the classroom; one that does not necessarily reflect the subject's stated learning intentions is a congruent pedagogical concern (Mr Brown, Mr Purple) reported in the reflections.

One of the particularly challenging pedagogical concerns highlighted by the majority of respondents was what differentiation practices to employ to cater for a broad range of learner capacities (N= 10/15). Generally, the sample seem to have come to the conclusion during their Year 1 PME that a 'one size fits all' approach will not work. "It is through effective planning and the awareness of students' individual needs that

creates that inclusive environment" (Mr Blue, *My Development as a Teacher).* Breaking down ordinary level material (Ms Silver), catering for more intellectual students (Ms Tan) and individual attention for those who are struggling (Ms Indigo) are methods mentioned during the *Credos*. Strategies such as employing a Visual, Auditory, Kinaesthetic (VAK) approach (Ms Lilac, Ms Tan, Ms Red) asking the students themselves how they best learn (Ms Indigo) and relying on good questioning skills (Ms Lilac), were also mentioned as interventions to address differentiation challenges. Uncritical adoption of VAK, which has experienced considerable recent undermining in the fields of psychology and neuro-science (Bishka, 2010; Cuevas, 2015) is concerning, particularly when it underpins interventions seeking the teenage students to label themselves as learners.

Reflection as an Improvement Process

"Experience alone is insufficient for professional growth, but when it is coupled with reflection it is a powerful impetus for teacher development" (Ms Lilac: *My Development as a Teacher).* The value of reflection on prior knowledge and experiences is manifestly acknowledged by one third of the respondents during their *Credos* (Ms Lilac, Mr Blue, Ms Indigo, Ms White and Ms Yellow). The process encourages an escape from the 'impulsive' (Ms Yellow) stimulating more deliberate and premeditated actions, opens one up to constructive criticism (Ms Lilac, Ms White, Ms Indigo) and is a means to examine oneself personally (Mr Blue, Ms White). Those who speak about the reflective process explicitly in their *Credo* universally laud it. They attempt to draw on their limited experiences of prior pedagogical knowledge. The other respondents (N=10) do not explicitly mention reflection as an improvement or learning process in their responses.

External factors influencing reasoned pedagogical understanding and action

Personal Challenges and Barriers

The pedagogical practices, which were employed by novice PSTs, in year 1 of their ITE are in many cases to be highly commended. In the context of embarking upon a new

career of professional practice, there are 'pockets of wonderfulness' on display. These moments are achieved despite personal concerns and issues such as inexperience, managing university work, teaching, planning and preparation (*Ms Silver*), commuting (*Mr Grey*) and for some, part-time jobs (*Ms White*). "This has been the most draining/exhausting period of my life" (Mr Grey: *My Development as a Teacher)*. "I need balance between the stresses of my work and personal life (Ms Red *My Development as a Teacher)*. These statements echo sentiments of a number of the respondents about the multifarious personal demands while completing the PME course.

Long commutes (Mr Grey, Mr Brown), unexpected illness (Mr Brown), family demands (Ms Lilac), mental and physical wellbeing (Ms Indigo, Ms Red, Ms Silver, Ms White) are all listed as added pressures for the PSTs as they commence their formative development as teachers. "It has become clear to me that due to the nature of our profession, we can easily slip into an unmanageable routine where we take on too much, become overworked and burn ourselves out" (Ms White, *My Development as a Teacher*).

Although some noted their levels of confidence in what they were doing (Mr Black, Ms Red, Ms Tan), the personal role change going from 3rd level student to practising classroom teacher was reported as adding to the anxiety levels for many of the respondents. "At the beginning of the year it was the first time that I had stepped into a classroom being on the opposite side of the education system. I was anxious and unsure of how I would fulfil the role as an educator" (Ms Indigo, *My Development as a Teacher*). Even those purporting confidence admit that "it is important to appear confident even if you do not feel like you are" (Ms Tan, *My Development as a Teacher*).

The need to become more organised very quickly at the start of the school placement was regularly cited as a contributing factor to increased anxiety and stress (Mr Black, Ms Lilac, Mr Purple, Ms Gold, Mr Brown, Ms Red, Ms Silver). There is an acknowledgement that lack of planning increases anxiety, "I get anxious if I am not prepared before facing a large group" (Ms Lilac, *My Development as a Teacher*). There is the suggestion that further investment in preparation and planning can bring about

a more positive outcome, “when I leave a lesson feeling accomplished and calm versus coming out feeling panicked and defeated, I feel much happier” (Ms Yellow, *My Development as a Teacher*).

The School/Systemic Challenges

Additional contextual school and systemic influences which impact on the practice of the respondents were also reported in the *Credo* documents. Pedagogy is not the respondents’ exclusive concern. They acknowledge their school context, and the need to develop other important aspects of the teacher’s knowledges, such as relational knowledge in their role. Awkward intimidating staffroom conversations about school politics (Ms White) or ‘troublesome’ students (Mr Purple) created a challenging environment for inexperienced PSTs. “I do not engage in any conflicts or allow myself to be roped into any discussions, that I feel uncomfortable with, among the established members of staff” (Ms Silver, *My Development as a Teacher*).

General pedagogical knowledge was needed when severe behavioural issues were also experienced. These were cited as adding to schools being described as “high stress environments” (Ms Gold, *My Development as a Teacher*). Close attention to behavioural issues were cited as considerable concerns by a majority of the respondents (Mr Black, Mr Blue, Mr Purple, Ms Gold, Ms Indigo, Ms Red, Ms Tan, Ms White). Not checking homework regularly enough (Ms Indigo, Ms White, Ms Red), general giddiness (Mr Purple, Ms White) and lack of lesson structure (Mr Blue, Mr Black), all contribute to issues relating to classroom behavioural management. The impact of these events can be quite frustrating for the PSTs; “I have found it quite difficult to remain patient with students who are poorly behaved, who show immaturity and continuously disrupt other students” (Ms Tan, *My Development as a Teacher*).

Despite these behavioural concerns, the degree of care provided to young learners by the PSTs is commendable. Employing their relational knowledge is a priority for them.

They highlight the extent to which they care about 'their' students in their *Credo* (Mr Purple, Ms Lilac, Ms Indigo, Ms Silver, Ms Tan, Ms White). They also speak about how the students can tell if they care and that by caring, it makes them better teachers (Ms Indigo, Ms Silver, Ms Tan, Ms White, Mr Purple). "The most notable discovery I have made about myself as a result of this placement is how much I care about people" (Mr Purple, *My Development as a Teacher*).

The means by which this level of care is expressed is through the development of positive learning relationships with the students. Building trust (Mr Brown, Mr Purple, Ms White), creating mutual respect (Mr Grey, Ms Red, Ms Yellow), and relating to them and their interests (Mr Black, Ms White, Mr Brown, Mr Grey) all contribute to the formation of these appropriate and sustainable relationships. The outcome from investing in this consistently across the placement is beginning to emerge at the time when the *Credos* are being written, "I truly feel a sense of respect from my class and it is a pleasant place to be" (Mr Grey, *My Development as a Teacher*).

Portfolio Analysis

Pedagogical dispositions, values and beliefs

The next phase involved an analysis of the lesson plans using QCA and the framework (*Figure 5.3*) developed from the review of the policy documents and the literature review. The respondents who demonstrated a prevailing focus on transmitting content in their lesson plans and reflections ranged from those ideologically professing constructivist principles, while engaging with content transmission practices (*Mr Black, Ms Yellow*), "In the last few months I have prioritised student learning over content coverage…checking in on student progression rather than getting through material" (*Ms Yellow*: *My Development as a Teacher)*, to those who largely rejected the constructivist ideology: "I provided these students with a hard copy of the notes that they had missed as there was a good amount of notes taken down throughout the lesson" (Ms Tan*, Lesson 6*). Ms Tan is an example of a respondent who consistently favoured transmitting content as a pedagogical strategy.

In the majority of their lessons (N=11/15), respondents employed their learning intentions structures as vehicles to explain what content they intended to cover, and/or transmit, in that particular lesson. Their success criteria tended to be structured as the 'correct answers' in a closed binary manner. A stark example of this style of learning intention being employed in lesson planning would be "Students should state that the annual precipitation level is 400mm" (Ms Lilac*, Lesson 2).*

Regardless of their professed ideology these respondents (N=11/15) consistently slipped into a method of lecture style transmission of content. They structured their lessons to be delivery systems of controlled subject knowledge with dialogic interactions devised to confine possibilities. "Teacher will use leading questions to prompt answers" (Ms Jade*, Lesson 4).* "The balance of teacher talk was off with me talking too much. A simple solution to this may be to get the students to read out the slides" (Mr Blue*, Lesson 5).* "I did try to get too much content covered in this class" (Ms Indigo, Lesson 2). Learners were routinely required to passively listen or to proffer recitative responses. PowerPoint was read by the student or listened to by the student as the teacher read it (Blue L5, Black L1, Brown L4, L5), "Students will take turns in reading out loud the material and definitions from the textbook" (Mr Brown, L5). Definitions/Notes were created by the teacher and then shared with students who wrote them down (Green L2, Jade L1, Red L4, Lilac L2, L3, Gold L2, L6, Silver L4, White L3, L5, Tan L1,L2,L3,L4,L5,L6, Grey L3,L4,L6), or similarly a timeline/model, available in the textbook, was drawn on the board and students were instructed to transcribe it into their copies (Green L3, Black L5) (Grey L3).

The sample's submissions revealed dissonance between the teaching philosophy and learning theories professed by some of the respondents, and the levels of theoretical understanding and enactment proficiency documented and reflected upon in their portfolios. For example, Mr Brown's professed general pedagogical disposition is that of a constructivist. It is strongly suggested in his plans and reflections that he wants to unlock the mystery of Mathematics for his students. However, the QCA of the portfolios also revealed him to be directing students to copy notes from PowerPoints and to read definitions out loud, in turns, from the textbook. In a particular mathematical engineering lesson, he also "expects students to make mental notes on

the learning intentions" Mr Brown (*Lesson 6*) and includes no learning outcomes or success criteria which could structure the learning for the learners.

Although regularly professed as their preferred pedagogical ideology, those constructivist practices, which this study claims align with the sought pedagogical understandings and practices in current pedagogical policy, are scarce. “Pockets of wonderfulness” (Seeley, 2015) appear, but they are not the dominant pedagogical craft. Despite 66% of the PSTs, (n =10/15), naming their commitment to constructivist thinking in their reflections, their actual pedagogical practices and understandings present such commitments inconsistently across time. In their *Development as a Teacher* document, constructivist proponents such as Dewey are mentioned (Ms Yellow, Ms Gold, Mr Purple) and Vygotsky and Bruner (Ms Jade & Ms Tan). However, the documented plans and reflection on practice witnesses a tendency to slip into transmitting content from a predefined syllabus. There are also examples of pedagogical inconsistency between subject areas of the same respondent (Ms Indigo, Mr Purple), where the pedagogical styles, between the stronger preferred subject discipline and the perceived weaker one, are significantly different (Mr Purple, Ms White).

Pre-lesson pedagogical deliberations

Disciplinary Conceptual Understanding

“Being an educator is all about creating learning experiences for your students”

Ms Gold: *My Development as a Teacher*

As Ms Gold stresses in this comment, a central pedagogical role of the teacher is advance planning which structures learning experiences for the students. An aspect of pedagogy clearly sought by *LAOS 2016-2020* is that teachers would design and prepare, in advance, sequences of learning activities and learning resources tailored to match (D. o. E. Inspectorate, 2016, p. 18). Such pedagogical awareness and proficiency dovetails with proficiency in disciplinary conceptual understanding and an ability to

unpack learning outcomes. As proposed in (Loughran's 2004) *CoRe* construct, clarity on the learning destination, the current learning locations of the learners, and the significant developmental milestones in the proposed attainment journey, all have the potential to reveal the types of scaffolding and support that the young learners may require in order to attain success.

Consequently, one of the key PCK considerations this study aimed to uncover was evidence of understanding and/or demonstration of a practitioner's awareness of the substantive and syntactic structure of their subject discipline. Specifically, the study was looking for evidence where this awareness was acknowledged, adopted or enacted in a way that would aid the PST's young learners to become more aware of the target subject discipline's rules, patterns, terminology, routines and methods. This objective was raised during planning at the beginning of the academic year by one of the respondents. "I want to develop Mathematical practitioners, not those who can solve specific examples based on the textbook. This requires planning, not just on the content I teach, but in the way I teach it". *Mr Brown, Melon High, Lesson 1.*

As Mr Brown opines above, reflecting on the underlying subject discipline understanding in such a way that might be integrated in the proposed theme or task to be engaged with is one of the important aspects of a constructivist style in teaching. Developing this pedagogical understanding is a key aim outlined in the *LAOS 2016-2020* policy document. It connects with the Junior Cycle's desired type of young learner, which is one who "describes, illustrates, interprets and predicts and explains patterns and relationships" (Education, 2015, p. 12). In 14% of the lessons analysed in this QCA study, there was some evidence of the PST attempting to uncover the conceptual understanding inherent in the topic they were engaged in. Underlying disciplinary constructs of *poetry* (Blue, L4, Red, L6, Lilac, L6), *narrative* (Blue, L6, Red L4), *Plot* (Green L1, Gold L2) and *rhythm* (Red L1, Purple L1) are some specific examples. These examples demonstrated pedagogical reflection on the part of the PST aiming to classify sections of a larger disciplinary concept. Ms Red created her own film reel to explicate the structure of narrative drawing on real world everyday experiences (Ms Red, L4). As Mr Brown further explained when speaking about his professed pedagogical methodology; "My goal is to break down large amounts of

information into manageable pieces and help them reconstruct the overlying idea or concept" (*Mr Brown*: *My Development as a Teacher*").

The QCA analysis revealed some tentative efforts to break down underlying disciplinary constructs and to supply building blocks for the learners. The strategy of preparing key words, and subject matter definitions, prior to the commencement of the lesson, was evident in most of the lessons analysed. The methods by which these key words were then shared with the learner varied, although PowerPoint presentations were the most popular means of doing so. In most lessons, PowerPoint, imagery and video sourced from the internet were used in conjunction with text slides for these presentations (n = 73/90). Many of the respondents (n=9) noted in their reflections that they discovered through experience that the inclusion of images in their presentations helped learners access challenging aspects of the discipline's learning as opposed to purely text dominated slides.

As described earlier, the relevant policies suggest that a key dimension of demonstrated disciplinary conceptual awareness in teaching practitioners involves their ability to observe the learning challenges from the vantage point of the learner (Education, 2015; D. o. E. Inspectorate, 2016). In this regard, diagnostic assessment and anticipation of learner conceptions and potential misconceptions, both of which employ aspects of this pedagogical substratum, were evidenced explicitly on three occasions during the portfolio analysis. For example, Mr Green utilised this pedagogical strategy, when engaging with the ancient Romans in his third lesson. Ms Red employed the strategy, when facilitating a discussion on music technology, in her fifth lesson. In Ms Red's class, the learners revealed a particular understanding of technology. "For some students they did not equate cassette tapes, or vinyl, as music technology". Ms Red had presumed that teenage students today only see MP3 players, online platforms and IOS/Android applications as technologies, but she wanted them to acknowledge what had come before chronologically in music's technological development. Thus, she prepared stimulating resources, involving vinyl records and cassette tapes, in advance to create dissonance for the students in her Music class. The reflective synopsis of the

lesson seems to suggest that they were cognitively destabilised when introduced to gramophones and cassette Walkman's.

Mr Brown and Mr Grey also utilised analogies and concrete exemplars to uncover abstract concepts in Mathematics and Science. In his *Lesson 6*, Mr Brown devised a lesson which looked for groups of students to solve real world mechanical engineering problems with mathematical solutions. He based it in the concrete world by selecting engineering problems, that would be prohibitively labour intensive without mathematical solutions. One example was the project of spanning a valley with a viaduct.

In Mr Purple's, *Lesson 1*, he developed his own playlist to uncover the concepts of *rhythm* and *timbre* as he did not believe that the audio accompaniment that came with the textbook would adequately support his specific group of learners to comprehend the concept. He searched for songs that embodied the concept that he wished to unveil. In her *Lesson 6*, Ms Yellow used her contextual knowledge of her students to develop a social justice case study that she knew would connect with their interests. Mr Green's *Lesson 1* used an Ultimate Fighting Championship fighter to explore 'plot' with the class. According to Mr Green, this was considerably more effective than the recommended *Cinderella* "which was wholly unrelatable to my class" (Mr Green*, Lesson 1*).

Difficulties relating to the above innovative pedagogical practices were also recorded in the Year 1 portfolios. The analysed reflections suggest that teenage learners were often required to attempt complex disciplinary tasks without creative resource scaffolds or clarity of purpose/rationale for the targeted learning. Analysis of lessons which dealt with *historical sources* (Ms Silver, Ms Tan, Mr White & Mr Grey), *creative writing*, (Mr Blue, Ms Jade, Ms Lilac, Mr Purple & Ms Gold) and *debates* (Mr Blue, Ms Indigo, Ms Yellow) revealed that learners were asked to undertake unstructured assignments. For instance, Ms Indigo set First Year students the task of a debate without addressing debate structure or format concerns. "As students will have covered this chapter in great detail, they should be able to engage in a debate" (Ms

Indigo, *Lesson 2)*. The practice of setting complex tasks for the young learners without scaffolding, or structure, to direct and support them through the process, included examples (n=5) whereby students were instructed to watch a video that was connected to the topic of learning, but were given no rationale or purpose as to what they were watching it for. In one lesson they were instructed to do so "silently" (*Mr Grey, Lesson 5*).

Assumptions about the 'life experience' of the lower secondary learners can obstruct meaningful engagement (Brophy, 2010; Frymier & Houser, 1998; Frymier & Shulman, 1995; Jang et al., 2010). Students were expected to draw from life experience in "*creating poetry*" (Silver L1), "*Political Debates*" (Silver L4) and "*Spatial awareness*" (Lilac L1). Domain 3 (*Teacher's Individual Practice* from LAOS 2016- 2020) requires that teachers "identify and thoroughly prepare in advance resources tailored to match the specific learning intentions of each lesson, or series of lessons, and individual students' learning needs" (D. o. E. Inspectorate, 2016, p. 17). However, this analysis of portfolios suggests an overreliance on a lecture style which expects that verbal explanations of complex concepts by the teacher will result automatically in embedded learning for young inexperienced learners.

Unpacking Learning Outcomes

"Writing an objective on the board is not sufficient for students' 'understanding'. Instead, I chose activities which embodied the learning outcome."

Ms Yellow, Pear High, Lesson 5

As noted by Ms Yellow above, in a statement resonant with the worries of (Shulman 1986, 1987) outlined during this study's literature review, purpose in learning is not simplistically communicated via written objectives on a whiteboard. Purpose is interwoven through the layers of a lesson. In their current format, the junior cycle style of specification demand careful unpacking by teachers in order to translate broad learning outcomes into meaningful learning intentions. This is a key mechanism in the design outlined in *A Framework for Junior Cycle* which explicitly uncovers the learning to be engaged with. This learning is not to be exclusively content focussed but should

connect with conceptual understanding, skill development, thinking strategies and attitudinal dispositions of the learners (Education, 2015). Through the QCA, this study was specifically looking for evidence of awareness and/or application of these types of learning intentions during planning or evidenced by reflection on practice in their reflective portfolio.

19% of the analysed lessons showed partial evidence of learning outcomes being translated into explicit disciplinary learning intentions. A smaller (N = 3/90) number of lessons demonstrated that the PST specifically contextually understood the learners' location and capacity in relation to the learning at hand. Consequently, those specific PST respondents attempted to support the learners in progressing from that point with a meaningful learning activity. For example, in Lesson 3, Ms Red integrated the concept of timelines from History, a subject that she does not teach, in order to support the students' understanding of the concept of musical progression over time. In his first lesson, Mr Grey devised his own "student friendly" experiment, using Vitamin C tablets, because he believed it would more effectively address misconceptions about the scientific process for the particular experiment that was the focus of the lesson.

Macro thought-provoking questions were also employed to link learning intentions to larger disciplinary understanding in three specific lessons (n = 3/90). Mr Blue, in *Lesson 2*, employed the question *Globalisation or Genocide: The Age of Explorations* in his 2nd year History class. In Lesson 4, Mr Brown asked students about the 'Doppler Effect' when teaching weather and climate. He 'stunned' the students with the unknown and then facilitated them to demonstrate how much of the unknown they actually were proficient with. Mr Black is clear about how he wants the learners to perform in his classes, "Information is there to be engaged with not simply to be accepted without criticism or scepticism" (*Mr Black*: *My Development as a Teacher*). These types of pedagogical strategies are clearly sought in both Domain 3 of *LAOS 2016-2020* and the *Framework for Junior Cycle 2015* (Education, 2015; D. o. E. Inspectorate, 2016).

Pedagogical/Instructional Techniques Rationale

This section reports on the pedagogical enactment strategies recorded via reflection in the PST portfolios. The influences of these pedagogical approaches range from constructivism, where the PSTs take on the role of facilitator, orchestrator or discusser to approaches that favour a more direct content transmission style.

Building on what the learner already knows, or on what they think they know, is a key principle of constructivist pedagogy. Reinforcement of learning which aids the transition of learning from working memory to long-term memory is crucial for this (Rosenshine, 2012). Respondents (N = 8/15) regularly engaged with this contextually concerned practice, particularly focussing on mini quizzes, board questions and worksheets. It is important to note that the activities revealed during this analysis were mostly concerned with recitative answering and knowledge retention, with a strong emphasis on the regurgitation of key words and definitions. Reflecting on this reality in his own lessons Mr Blue mused that "much of his dialogic teaching results in recitative answers" (*Mr Blue*: *My Development as a Teacher*).

Explicit modelling of incremental stages for a complex learning task was evident in three lessons (n=3/90), involving Ms Gold, *Lesson 2* and Ms Silver *Lesson 3 and 6*. Ms Gold modelled the steps and stages that the learner would have to follow to effectively verbalise a plot or theme of a chosen genre (Ms Gold *Lesson 2*). Ms Silver drew on rhymes, that she knew her 1st year students would remember from primary school, to help reveal some of the structural principles of rhyming. The students were then able to apply this knowledge to more complex poetry under discussion. This pedagogical enactment strategy can be important for novice learners who do not have a critical mass of life experience. It is an even more powerful pedagogical strategy when it is bolstered by specific learning supports which scaffold the learner's early efforts at the task (Rosenshine, 2012; Slavin, 2019; Vygotsky, 1962).

A number of the PSTs occasionally attempted to facilitate a discovery or learner centred explorative style lesson (Mr Purple, Ms Red, Ms White). "Scaffolding appears

to not only produce immediate results but also instils the skills for independent problem solving into the future" (Ms White). However, the PSTs who tried this strategy demonstrated an inexperienced structure and sequencing of their lessons which obstructed them from being as effective as they hoped to be. Unfortunately for Ms White, some of the students with whom she attempted this pedagogical strategy seemed intent on obstructing her through disruptive behaviours. Students "shouted over each other", were "extremely giddy", were "asked to stand for the lesson" and required "exclusion" (Ms White, Lesson 6). The will was there to enact a constructivist stye but in practice the levels of preparation were either not recognised, or underestimated (Mr Brown, Lesson 1).

In 10% of lessons, (N=9/90), there was evidence of connecting the learning purpose to an authentic real world learning activity. This involves connecting the concrete and abstract substantive and syntactic learning in one's subject discipline directly with the lives of the learners. This strategy was reported by junior cycle learners as having a positive effect on their motivation and attention in Smyth's longitudinal study (Smyth et al., 2006). "Students are more easily persuaded into learning if I make what we are learning relevant to their own lives…like a mother giving medicine, you must give them the honey and the medicine" (Ms Silver: *My Development as a Teacher*). There was a strong correlation between this style of pedagogy and the nature of the subject being taught. This pedagogy was consistently more likely in a subject that is traditionally considered "practical" and explicitly develops skills, such as Science, English, Maths or Music (Red L2-L5, Lilac L6, Gold L2, Grey L1 & L4, Green L1, Purple L1). In those lessons analysed, where there was a focus on more abstract concepts, this real world relatability was not explicitly evident - an indicative finding that converses comfortably with Shulman's concept of 'domain specificity', when it comes to teacher planning and preparation, (Shulman, 2015).

The above minority 'pockets of wonderfulness', (Seeley, 2015), examples were overshadowed by the predominant pedagogical strategy of transmitting subject content to the learners, evident in the year 1 portfolios. The majority of the lessons in 73% of the respondents' submissions employed learning intentions as vehicles for the content they intended to teach in that particular lesson. Consequently, physical note

taking from the board, or a PowerPoint, was a popular learner activity. The teacher's role was often to "show the class the relevant slides" (Mr Blue*, Lesson 4).* When PowerPoint wasn't employed, many respondents reported asking students to read from or highlight the textbook without offering any clear purpose or pedagogical rationale for utilising that particular student activity. "Students will take turns in reading out loud the material and definitions from the textbook" (*Mr Brown, Lesson 5*). "Students will be reading from the book and highlighting/underlining any key words or phrases" (Ms Indigo*, Lesson 3*). In these lessons, 66% of the total of those analysed, the teenage learners are predominantly passive recipients of content.

The transmission of content seems to '*de facto'* be the key role undertaken by the PST. This often resulted in an extremely teacher-centric lecture style of lesson, "I need to remember that I should not be the only one talking for an hour-long class" (Ms Tan*, Lesson 1)*. The implications of positioning themselves in the role of the lecturer are highlighted in the respondent's portfolios. There is a reliance on their lecturing ability to orally explain both concrete and abstract concepts. "I have attempted to teach musical concepts by explaining them verbally to students but have found that it does not have a strong impact" *Mr Purple: My Development as a teacher.* A reliance on this type of lecture style is challenging even for a highly experienced established practitioner. As a pedagogical strategy it can sometimes fail to acknowledge the perspective of the young learner as they individually grapple with the new learning material from their perspective.

The lecture style of teaching was even evident where digital technology was in abundance. Even for those PSTs who had classes where each student in the class had a digital device (n=2/15), there was still an insistence on students taking down notes from PowerPoints into their copies. The most regular use of that digital device in those two classrooms, was to access the subject's digital textbook. Traditional pen and paper note taking was evident in each of the (n =12) lessons analysed where all the students had a digital device. In one class, students used traditional mini whiteboards, to display recitative content focussed answers, despite having their digital device (Ms Jade*, Lesson 2*).

There were, however, a couple of examples where digital technologies were powerfully incorporated into a learning experience. Independent research was conducted on tourist attractions in Dublin (Ms Jade, *Lesson 3*). *Muse Score* and *Garage Band* were incorporated into a Music lesson effectively (Ms Red, *Lesson 5*). It appears extremely challenging for novice practitioners, who are struggling pedagogically, to be expected to meaningfully integrate digital devices in a powerful way into their lessons. This study's portfolio analysis suggests that they would need considerable support to explore how the learning and teaching power of devices could be effectively harnessed and deployed within their subject area. There is a burgeoning research field which is currently tacking this problem called TPCK *Technological Pedagogical Content Knowledge* (Koehler & Mishra, 2014; Niess, 2014). However, this is outside the scope of this current study.

Analysis of the respondent' planning and reflection suggests that the pedagogical decision to employ this style of content transmission teaching may be strongly influenced by the PST's classroom management and control concerns. Ms Gold banned questions from students until the last five minutes, so that she was not 'bombarded' with them. Students instead concentrated on taking down notes from the PowerPoint (*Ms Gold Lesson 1*). This study's analysis uncovered examples where 'silence' and/or 'occupation' were misconceived as attention, engagement and/or learning "I did not have enough information and exercises to keep them occupied" (*Ms Jade Lesson 2*). "Behaviour was a lot better today…this may be due to the students being half asleep as it was first class of the day" (*Ms Tan Lesson 1*). "If they are busy, the chances are they won't misbehave" (*Mr Green Lesson 4*). "I think the students worked well as they were kept busy throughout the class" (Ms Tan*, Lesson 2).* The data suggests that these respondents believe that occupying students with lower order tasks will divert the young people's attention from disruption and misbehaviour. Some of the PSTs are tentatively coming to the conclusion that their need for control in the classroom might be negatively affecting the learner experience, "Students who struggle tend to zone out" (*Ms Lilac Lesson 2*).

Differentiation Strategies

The Teaching Council's *Professional Code for Teachers* clearly states that practitioners are expected to "develop teaching learning and assessment strategies that support differentiated learning in a way that respects the dignity of all students" (Council, 2016b, p. 7). The portfolio analysis process uncovered significant occurrences of differentiated practice. *Choice in learning process* (Mr Green L1), *extension activities* (Mr Green L5 & Ms Gold L4), *differentiated learning resources* (Ms Jade L3 & Mr Grey L2, L3, L4, L5) and *reduced work volume* (Red L2, Ms Lilac L3, Ms Yellow L4, Ms White L4 and Ms Tan L6). The majority of the respondents were attuned to the needs of students with pronounced learning difficulties. (Ms White Lesson 5) specifically sought out an audio version of a poem for a student who she felt would not be able to engage with it through reading unassisted. Mr Purple even considered left-handed students in his planning for a practical music lesson (Mr Purple *Lesson 5*).

However, some respondents really struggled aligning a need for differentiation with a lecture style presentation methodology. "Differentiation in the class includes the content I am covering and the speed at which I am speaking" (Ms Gold, *Lesson 1*). When differentiation strategies were employed, the predominant form of differentiation recorded in the portfolios was pairing 'stronger' students with 'weaker' students. 75% of the respondents employed this strategy in classes explored for the QCA. Ms White perceived that this differentiation strategy might result with problems; "potentially stronger students are not challenged by the level and pace of the class and are now bored" (Ms White *Lesson 3*). This consideration of individual levels of challenge was not evidenced in other respondent's portfolios.

Ms Silver identified a conflict between the differentiation theory she had encountered in her ITE programme and her placement cooperating teacher's views of differentiation. Ms Silver originally "thought that differentiation had to consist of different activities for pupils based on ability" (Ms Silver *Lesson 3*). Her cooperating teacher advised that differentiation occurs discretely through "discussions and different levels of questioning". The advice, communicated to the PST, that

differentiation did not need to be planned for, and can be catered for 'in the moment' in a "dialogical" lesson by directing different levels of questioning to different students, was regrettable. Of course, highly skilled and experienced classroom practitioners can differentiate in the moment, but a concern here would be that these practices could betray embedded traditional content transmission pedagogy with constructivist and differentiation methodologies moulded on top.

Reflection as an improvement process

As noted in Chapter 3, portfolios can be an opportunity to demonstrate understanding and practice and to record successes in planning and implementation. They can also be a medium for reflecting and reasoning on what may not have worked and what might have supplemented or improved a particular approach integrating new learnings with prior pedagogical knowledge and experience. Analysis of the portfolios suggests that the PSTs systematically reflected on their pedagogical approaches after their lessons.

The data reveal frequent occurrences in reflections where the PSTs regret lack of sufficient premeditation and/or resourcing in advance of their lessons. Ms Gold realised that she had not really anticipated the issues the young learners would have with her lesson on exclamation marks (Ms Gold*, Lesson 4)*. She felt that the learners would have been better armed if she had prepared some definitions for them. Ms Yellow realised that she has to have a lot more clarity about the purpose of the lesson. Otherwise, the "lesson lists and behavioural management issues ensue" (Ms Yellow, *Lesson 3).*

As suggested earlier a consequence of under-planning and preparation is an over-reliance on a perceived ability to explain multi-faceted concepts to young learners orally. This is also revealed in the reflections. "I need to introduce the structure first before teaching dialogically" (*Mr Blue, Lesson 6*). It is commendable that these pre-service practitioners are honestly identifying weaknesses in their approach. There are also commitments in the reflections to tackle future planning with an alternative

approach, “In future I will find activities that explain the concept better and use imagery” (*Ms Jade Leeson 3).* There is also an acute awareness, on the part of some, that preparation is key. “Both students and teachers suffer from poorly organised lessons” (Mr Brown; *My Development as a Teacher)*. “I am going to improve both my planning and my content knowledge as I feel these are often the causes of my lack of confidence” (Ms Yellow; *My Development as a Teacher)*.

Respondents regularly reflect that they are concerned about their style of teaching. They worry about their personal enjoyment of it, and how engaging it is for the students. “I did try to get too much content covered in this class” (Ms Indigo*, Lesson 3)*. “I found myself questioning whether my lessons were interesting and engaging (Ms Silver*, Lesson 2)*. In what explicitly appear to be frank reflections, the PSTs are aware that the pedagogy employed was having a detrimental effect on the motivation of the learners. “Students who struggle tend to zone out” (Ms Lilac*, Lesson 2).* “Stronger students are bored by the slow transcribing notes task that has become their role” (Ms White *Lesson 3)*.

One aspect of reflection which the analysis did not reveal was a critical approach to the rationale for employing particular teaching methods. When the PSTs departed from a traditional lecture style of teaching and experimented with other methodologies, there were a number of examples where they employed those methods for inauthentic tasks/activities. The tasks lacked alignment with the theoretical underpinnings of the chosen methods. *Think Pair Share,* a method for snowballing collaborative ideas and solutions to complex tasks was employed for querying personal musical interests (*White L2*), favourite movies (*Red L4*) and lower order atlas work (*Lilac L1*). Despite the students engaging with this constructivist method, their efforts were unfortunately undermined by ‘correct answers’ being later presented for copying via PowerPoint (*Red L6*). The PowerPoint had been created by the teacher before the *Think Pair Share* activity. The product emerging from the learners’ collaborative work fails to progress into what is then presented as the learning of the lesson. The cognitive level of the task is not matched with the underpinning rationale of the methodology.

This is also evident with the unsophisticated deployment of *traffic light systems* (Silver L4) *two stars and a wish* (Lilac L3), *assessment for learning* (AFL) (Yellow L1). Ms Yellow justifies the use of AFL by suggesting that she would give oral feedback on accounting actions displayed by the students. The actions are clearly clarified as either right or wrong relating to the positioning of expense items on a credit or debit side of an account. She later reflected with the following paraphrase from Hanna (2010, p. 72) "Teachers need more than content knowledge. Being aware of pedagogical content knowledge which provides insights into difficulties students may have in a certain domain is essential". She also states that in this particular class, her lack of PCK knowledge "affected the quality of my teaching and as a result the quality of learning" (Ms Yellow, Lesson 1).

The portfolio evidence suggests that there is a potential for increased pedagogical reasoning and reflection addressing the rationale and theoretical underpinnings of adoption of these methodologies. The methods are being deployed in lessons which are predominantly lecture style with the regurgitation of fixed knowledge-based answers being the main objective. The portfolio analysis indicates that these active learning methods are, in general, understood by the PSTs at a shallow surface level only. This research suggests they are consumed as 'tips and tricks' for the purpose of learner diversion and occupation.

External factors influencing reasoned pedagogical understanding and action

Personal worries

The main personal issues which the respondents referred to in the lesson plans and reflections were struggles with their own subject content knowledge and struggles with behavioural management. Needing more basic knowledge about the subject matter of the lesson (*Ms Jade* L1) and not understanding the level of knowledge and understanding held by the learners in the target learning topic (*Ms Red, Ms Lilac, Ms Indigo, Ms Jade, Ms Gold*), caused a lot of concern for the PSTs. This is the level of subject content knowledge that Shulman speaks about where he suggests classroom

practitioners need comprehensive disciplinary knowledge above and beyond the target learning group (Shulman, 1986).

Insufficient content knowledge was also one of the factors which led to behavioural management issues, a major source of anxiety for some of the respondents. Inexperienced time management (*Green* L2), lack of structure and/or purpose for the learning (*Blue L1, Jade L1, Lilac L2, Yellow L3, Silver L2*), and getting side-tracked from the original objectives (*Blue L4, Red L2*) were also some of the significant contributing factors to behavioural management issues. These control issues led to lessons focussed on reprimands (*White L6, Grey L4*) and changes to teaching methodology to reduce the potential for the behavioural events to reoccur (*Green L4, Tan L1, L4, Green L6, Black L6*). These occurrences tended to result in teacher-centric lecture style transmission lessons.

The School Site/University Site

This study reveals that the experiences and contexts of this specific sample of PSTs at their school placement had a significant impact on how their practice developed. The learning relational culture of the school, the support of their cooperating teacher and supervisor, behaviour management proficiency and the frequency and level of their assigned classes were all factors which they referred to as either being supportive, or further undermining their levels of confidence and assuredness. Their portfolio reflections suggest that these factors strongly influence the methods they choose to deploy in their classrooms and their disposition and expectation of the teacher educators they engage with at their university site.

In a recent report on school placement, commissioned by the Teaching Council the authors underlined that a "key element in this support is the opportunity to observe teaching, co-plan and co-teach with their cooperating teacher… for the purposes of strengthening the integration of theory and practice, the development of an inquiry orientation, and an appreciation of the need to base professional decisions on evidence", (Hall et al., 2018, p. 11). Recent qualitative research on school placement, in

another ITE programme in Ireland, found there were a range of experiences for the PSTs from the 'isolated' to the 'supported' (Long et al., 2012). Long's research found more of the former than the latter.

Some of this study's respondents laud the support that they received from a cooperating teacher. A review of the sample's responses hints that there is significant personal and emotional support from cooperating teachers and others in schools. Considering some of the aforementioned challenges that the PSTs experience, this is to be welcomed. However, the same review uncovers little or no evidence of professional pedagogically oriented conversations and planning meetings involving authentic discussions about prioritising disciplinary knowledge and the methods by which to best introduce that knowledge to young learners. When they speak positively about the relationship, they still talk about snatched conversations moments before classes start, and general interactions concerned with setting content or themes to be covered within a specific period of time.

The individual relationship with the cooperating teacher occurs within an existing institutional culture and structure. Data that emerged from this study suggests that this culture and structure influences the level of confidence that some PST respondents feel in enacting practice. One respondent commented about a pervading school culture of 'quietness equalling learning'. Another bemoaned that the teachers continued to teach as if it was Junior Cert, ignoring the introduction of junior cycle. Another spoke about being exposed to staffroom conversations that she was uncomfortable with. Not knowing students' names, lack of content knowledge, not understanding the school's local context were all mentioned as personal hindrances to developing progressive teaching practices at the placement site which aligned with theoretical explorations undertaken at the university.

The Systemic

There are a number of external factors that could be contributing to the preponderance of content transmission style practices that are evident in the submitted sample of lesson plans. Many PSTs start teaching three to four weeks before the PME programme even starts and have to survive what they refer to as a "sink or

swim" period. This crucial opening gambit can have far-reaching influence on how they proceed. They are also balancing, college, travel, researching, teaching, planning, correcting and for most a part-time job to help with considerable fees. These respondents suggested that they are profoundly time poor. It may have been a challenge for a novice practitioner to behaviourally manage a group of students while experimenting with a dynamic pedagogical style (Mr Brown & Mr Grey). They may also find themselves working in environments where textbooks and terminal examinations still dominate, even if they are not teaching exam classes (Ms Yellow L2, Ms Red L6, Mr Black L4 & Mr Purple L5).

Some respondents bemoaned this dominance of the textbook in their teaching methods. "I feel I am still bound by the textbook, not for learning purposes, but rather to show at the end of the year that the students have been filling out their portfolio book" (Mr Black *Lesson 3*). This is particularly agonising as Mr Black clearly positions himself pedagogically as a practitioner who is diametrically opposed to this practice: "I do not think that students engage enough with learning through reading from textbooks and answering textbook questions" (Mr Black*, Lesson 3*). He even approached his methodologies lecturer and cooperating teacher to voice his frustration with a textbook/workbook style of teaching. This focus on following the textbook as the primary source for learning also brought frustration to another respondent. "I have consciously been trying not to rely on the textbook and its sequencing…I believe the era of the textbook is over; they should be used as guidelines, not the only resource used in a classroom" (Mr Brown: *My Development as a Teacher*).

Despite these personal and systemic obstacles, the PSTs that were sampled display a commendable work ethic and genuine concern for the young learners in their care. However, the findings strongly suggest that pedagogical considerations are not foregrounded, by them/for them, from the evidence of the submitted lesson plans. The discussion chapter will aim to uncover the factors and circumstances that may be influencing this indicative sample's outcomes.

Focus Group Findings

Six of fifteen respondents whose portfolios were analysed took part in the Focus Group. Initially the Focus Group was arranged to be in person, but eventually took place through a digital medium as a result of the Covid-19 pandemic. The Focus Group took place at the end of their 2nd PME Year, and the attendant PSTs were able to reflect on their experience of their first year, and to reflect on what had changed, augmented or progressed in their own pedagogical understanding and enactment since they submitted their 1st Year portfolio. In the Methodology Chapter, I outlined the rationale for selecting the Focus Group over other potential methods, such as an interview or a survey. The planned questions were theoretically complex and probing and the 'loosening effect' was crucial to inspire confidence in the respondents, so they felt comfortable to answer freely. The protocol outlining the introduction and the semi-structured questions employed are detailed at *Appendix D.*

Pedagogical Dispositions, Values and Beliefs

Reflecting on their PME Year 1 pedagogical dispositions, the participants admitted that their pedagogical style was heavily influenced by prior pedagogical experiences of content transmission strategies that they had experienced when they were second-level students themselves. "In PME 1, I had an almost university lecture style where I would talk for most of the lesson" (Mr Brown: *My Development as a Teacher*). Starting to teach on school placement one month before the PME programme began at university was cited as a contributory factor to this disposition. "The PME course is a bit mad, that you go in and teach for a month without having to set foot in a lecture…a PME goes in, and all they know how to teach is how they were taught in school, you are just going to be making the same mistakes" (Mr Purple). "In the first year you are kind of just doing what you know teachers to do, the whole default, the whole apprenticeship and observations, you are just doing what teachers done before" (Mr Grey).

On reflection the participants felt that their experience had been that the learning aspired to in their classrooms, when they were students, had been kept as a secret by the teacher, and they wished to change that for their students. “We were just told to open your books on page something and you didn’t know what was happening” (Mr Purple). The PME course encouraged their pedagogical orientation to focus on purpose and active engagement for the learner, revealing the learning process and destination for them. “It was kind of really bet into us about the learning intentions, the action verbs, the order of learning and all that” (Mr Grey). “The PME course is very much about active learning, active environment, get the kids up and active, all this kind of stuff” (Ms Lilac).

However, in the Focus Group at the end of their Year 2, the pedagogical understanding and enactment of what they were trying to do was still observed to be emergent. This presented itself with limited content focussed understandings and enactments of learning intentions, “I kind of enjoy having the learning intentions on the board and then before every lesson of a new chapter” (Ms Jade). Tokenistic change of the long-established pedagogical status quo was also evident. One respondent referred to the ‘new modern way of teaching’; “I’d teach with PowerPoints and all, and then the kids would have the teacher the next day and she would be going back to the book…so I was kind of helping her with the technology and she was helping me take things from the book…I learnt in the old-fashioned way and she kind of learnt the new modern way” (Ms Jade).

Systemic barriers which obstructed their preferred pedagogical disposition or orientation were also reported by the participants. The focus of the PME on the foundations of the new junior cycle had “other [in-career] teachers looking to us as the professionals almost funny enough… there are certain teachers who are still thinking this is Junior Cert with a different label” (Mr Grey). Mr Purple was trying to introduce more constructivist methods but found that within school culture “there is a lot of things that…moulds that could be broken that you can’t really do yourself. Wanting to be a learner centred teacher was challenged by students as well as by colleagues, “it’s very hard to have active methodology and stuff for 6th years, you are restricted, it’s

notes and stuff like that" (Ms Lilac). Ms Lilac's students demanded a traditional content transmission style from her.

Pre-Lesson Pedagogical Deliberations

One of the eight questions, asked in the Focus Group, queried whether the respondents had ever explicitly connected a pedagogical theory from college with a teaching and learning strategy in their classroom? This question was phrased in order to ascertain to what extent theory was employed to create appropriate learning tasks and resources for the respondents' particular teaching and learning context. This question emerged from the data analysis as there seemed to be a lot of reference to *what* to do in classes, but little reflection on *why* or *how* to do it?

Some participants connected with a particular theory such as relating the learning to the learner, both in their planning, "starting from fundamentals and using pictures rather than just jumping in", *Mr Grey*, and in their resourcing of the learning "building up a resource of good examples for things, and relatable examples for things is I think one of the most important things about being a teacher", *Mr Purple*. Most responses strongly suggested that the integration process was mainly consumerist and transactional. Ready-made strategies such as visualisation exercises, descriptive drawing, and Exit Grid were observed in college and then deployed at school without a high degree of criticality or contextuality. During this phase of the Focus Group, these respondents did not share experiences of individually adapting pedagogical theories and creating alternative linked resources based on the perceived need of their individual learners and context.

One of the key mechanisms by which the pedagogical aims of the new junior cycle are promoted by the NCCA and formatively supported by the DES Inspectorate is the ability of practitioners to translate the curriculum's learning outcomes into meaningful learning intentions for the learner (Aseessment, 2015; Education, 2016; D. o. E. Inspectorate, 2016). As seen in the previous section, the analysis of the portfolios revealed that a significant proportion of the lesson plans analysed seemed to employ

learning outcomes and learning intentions/success criteria as instrumentalist mechanisms to transmit specification determined content knowledge to students. The Focus Group provided an opportunity to further explore this and to explore the extent to which this approach may have been reviewed by the PSTs over the intervening twelve months.

Different understandings emerged about what these teaching and learning mechanisms were and how they were to be effectively deployed. These ranged from "slowly revealing what each intention is, but also to scaffold what they should be doing with the success criteria", *Mr Grey* to "having the learning intentions on the board before every lesson of a new chapter…to build it from what they know", *Ms Jade*. Mr Brown reported that at the beginning of Year 2, he was still employing "broad and vague" learning intentions, but that his understanding of them as a mechanism had deepened as the year progressed. Mr Purple revealed that not having written the learning intentions on the board was the only criticism that he had received from his HEI supervisor throughout his supervisions.

They reported the translation process of learning outcomes to learning intentions as a struggle, "trying to translate it into learning intentions and some of them just seemed really overly easy", *Mr Purple*. However, one that potentially might improve the learning experience for the learner, "sharing what you want kids to learn, they'd probably learn more than if you don't tell them", *Ms Lilac*. One respondent went further, complimenting the way the HEI engaged with the process, "it was kind of really bet into us about the learning intentions, the action verbs, the order of learning and all that", *Mr Grey.* In his experience at his school sites, he thought that "the modules we had done had actually better equipped us than some of the [*established*] teachers just being introduced to the Junior Cycle", *Mr Grey*.

One respondent reported about an optional online course that she had taken during Covid-19 lockdown. The course was specifically focussed on the importance of success criteria. All course participants were asked to draw a house but when the scoring commenced, the facilitator started handing out marks for the inclusion of features

such as chimneys. Many of the participants did not fare well in the assessment. The facilitator then showed the participants a list of success criteria that could have been employed for that task and a discussion ensued about how such a mechanism can be supportive to all learners. This experience had really resonated with the respondent about the importance of having clear purpose for learning and explicitly communicating that to the learners.

Pedagogical/Instructional Techniques Rationale

Given some of the misconceptions outlined in the previous section, the Focus Group aimed to explore in more depth the understanding of the respondents of the relationship between subject content knowledge and transmission of the curriculum, and a deep clinical understanding of pedagogy. The portfolio analysis uncovered a substantial volume of practice which focussed on the *what to do* methodologically in classroom practice and not so much on the *how* and *why* of employing a particular methodology. The Focus Group provided the opportunity to probe the respondents on their pedagogical understanding one year later, and whether there were pertinent elements of understanding and practice which had not been recorded in the portfolio at that time.

The respondents were keen to report the pedagogical progression that they had attained since the submission of the portfolio at the end of Year 1. They reflected on some of their self-identified errors and flaws from Year 1. “I had been trying to explain things, trying to talk about film music at one point without any film music to play for them”, *Mr Purple*. “I had an almost university lecture style where I would talk for most of the lesson…I would have students read from the book as that was what I had experienced at school…It was a very traditional style of teaching”, *Mr Brown*. Many of them had progressed to teach older years and it had stimulated them to consider alternative approaches. In relation to ‘active methodologies’ one stated “third years were not having any of it, they were just withdrawn, while first years were so up for it because it’s all they knew”, *Mr Grey.*

During the Focus Group, the respondents spoke at length about different teaching methods which they now employed in their classrooms. They mentioned strategies such as Exit Grid, PowerPoint, Back-to-Back descriptions, Pictorial theory, relatable examples, and visualisation exercises. One respondent's strategies had been lauded by the DES Inspectorate in a published report (2019) earlier in the year. Respondents spoke confidently and competently about constructing learning from where the learner was at: "starting from fundamentals and using pictures…first to build up their knowledge from there", *Mr Grey,* and relating the proposed learning to the world of the learner: "building up a resource of good examples for things and relatable examples for things is I think one of the most important things about being a teacher", *Mr Purple*.

There were examples cited of where they had rejected 'traditional approaches' and were experimenting with strategies which were constructed from the perspective of the learner. "Teachers can fall into what I like to call the axiom mentality. This is where the material being taught is so well known that they fail to show/explain the reasoning behind the logic of how it works…It should be treated as a challenge of reasoning, not something you'll just have to learn", *Mr Brown*. "I was asking something that they would like to know about rather than just jumping straight into what's in the book", *Mr Grey*. However, there were warnings about experimentation with multiple strategies and methodologies, "there is a lot of theories thrown out there like flip the classrooms and stuff like this, like they kind of seem like novelties at this stage", *Mr Grey*. Also, there were warnings about the school site and context as barriers to non-traditional planning and practice, "active learning, like that worked really well but last year my kids were a bit more academic. They would've been like, no Miss, we want notes", *Ms Lilac*.

They also acknowledged the level of thinking required to prepare a creative and engaging scheme of learning for students in their classes. One example was where the PST employed grid references which were supplied to students so that they could find their way to their allotted seat in the classroom. The PST then used a 'Cluedo" activity to reinforce the learning. Another respondent detailed how they used a Twix biscuit to

represent a cross section of the planet earth. “So, stuff like that you’d really have to sit down and think about and bringing in a plan…I tested it…If your nine-year-old brother understands, then teach it to your first years, as simple as that”, *Ms Lilac*.

Throughout the conversation there were moments where the depth of pedagogical understanding of the rationale and the effective employment of teaching strategies were called into question. A teaching strategy that is normally employed to encourage the promotion of descriptive subject specific language was gamified without a significant learning purpose (Get the Picture Strategy). Complex theories in subject specific domains were analogised using resources that would be difficult for young learners to make meaningful connections. The teacher’s hands were used as the main teaching tool for demonstrating Plate Tectonics. A hand was also used for teaching about the musical stave. Some of the creative activities still suggested a strong focus on recitative learning of basic examination content as its purpose. Most of the methods that were discussed were collected from demonstrations at methodology classes at university and then deployed into class at school.

External factors influencing reasoned pedagogical understanding and action

A range of school site factors, that were acting as barriers to teaching practices that are pedagogically constructivist by design, were discussed in the earlier Focus Group findings section outlined above. This section includes findings on external factors other than those already reported in that section.

The ways in which PSTs were received and supported in schools was a mixed experience. One respondent referred to having three cooperating teachers whom he shadowed for the first few weeks, (Mr Brown). This meant that he was observing established teachers in their practice before he took a class himself. Another experienced an open-door policy where established teachers came in and observed her class giving constructive feedback, (Ms Jade). Pedagogical collaboration was reported as transitory and informal, “It was more so just in the morning before the class”, *Mr Grey*. Agreements were made with the established teacher about covering

certain chapters, content or themes within a given timeframe. No respondent reported sitting down with a colleague in a collaborative manner to discuss pedagogical strategy.

Others' experiences were cited as being frustrating by the respondents. "I didn't actually have a so-called cooperating teacher", *Mr Grey*. The established pedagogical culture in the school was cited as an inhibiting barrier for certain practices, "It feels restrictive for the students, because I'm trying to let them be creative and be free in their learning, but then you have the school trying to keep everyone quiet…I get a lot of friction from some teachers about how loud my class can be", *Mr Grey*. Another respondent while discussing the same school practices mentioned, "There is so much embedded in the culture of the school that could have been there for years…moulds that could be broken that you can't really do yourself", *Mr Purple*. "I found there is a lot of teachers who are so used to Junior Cert rather than the junior cycle that they are still churning out the same assessment questions…this is Junior Cert, just with a different label", *Mr Grey*.

There was a reported fear and discomfort to being observed by an in-career colleague in the school placement site, *Mr Grey, Ms Lilac*. This seemed to connect with an anxiety of being identified as a 'student teacher' by the school's students and a lack of continuity on site because of the requirement to attend the university. The respondents seemed to indicate that there is an incongruence between the systemic structures provided for their support and some of their preference to be left alone. "Whereas in a school where you don't know anyone, they are not interested really of what way you teach and stuff like that. So, I think for me, it was better this year, I was just left to my own devices and that was it, no one said, can we come in and watch you teach, you are ok sort of thing", *Ms Lilac*.

Getting to know the students, not being identified as a student teacher, having more days in school than in college to assist continuity, grasp of subject content knowledge, understanding the school context and the student cohorts that you are asked to teach were all listed as significant factors that lead to increased or diminished confidence

when going into a classroom as a PST, *Ms Lilac, Mr Purple, Mr Grey*. "Planning was the biggest factor in feeling more confident. Knowing exactly what you want to cover allows you to walk into a classroom more confidently", *Mr Brown*. "In first year, they knew I was a student, and they can smell the fear off you", *Mr Purple*. The year group that you are timetabled to teach was suggested as a crucial factor, "If you are given First Year groups, happy days", *Ms Lilac*. "Even Sixth Years, I went in, and they were two years younger than me, and I was just like 'Oh my God!'", *Ms Lilac*. The educational culture of the school and whether you were asked to teach an exam class had a direct influence on the type of teaching and learning happening in a classroom, "My kids were a bit more academic. They would've been like 'No Miss, we want notes!' I felt for them, you can't…it's very hard to do active methodology and stuff for 6th years, you are restricted", *Ms Lilac*.

There was a sense that there is incongruence between the PME course, and the established practice in schools. Potentially, university practice is a performance undertaken as a rite of passage, but not necessarily maintained onwards into career practice. "That's what the PME course is very much about, active learning, active environment, get the kids up and active all this kind of stuff. Whereas in some classes you just can't do that", *Ms Lilac*. "I think there is a lot of theories thrown out there like 'flip the classroom' and stuff like this, they kind of seem like novelties at this stage", *Mr Grey.* A respondent reported that they were delighted with the practice of the university to allow PSTs to teach extra classes off timetable. It meant that they could teach 'normal' classes but "you don't have to put the classes down on your timetable for inspection", *Ms Lilac*.

Another motive for the Focus Group was to explore the PSTs' experience of pedagogical support from the university and how that facilitated them, as novice practitioners, to develop their pedagogical understanding and practice. When reflecting on their university based pedagogical experiences the respondents focussed on three particular strands within the PME programme. These included full auditorium lectures, small group tutorials and medium sized methodology classes. In most PME programmes in Ireland existing teaching practitioners and retired teaching

practitioners join with 3rd level School of Education staff to facilitate these three strands of the programme (O'Donoghue et al., 2017).

The respondents highlighted their general pedagogy lectures as being a positive experience, "I learnt a lot there as well, just about different methodologies and that", *Mr Grey*. There was a dialogic approach taken by the lecturer which the respondents felt raised engagement levels "compared to large lectures in other modules we would have in a lecture theatre, where they would literally talk into a screen and you had to listen for 40 minutes or 50 minutes", *Mr Purple*. "In the lecture setting they are teaching us *how not* to teach, yet they are doing the same mistakes that they are telling us not to make. So, I have a bit of bone to pick with a lot of the lecturers" *Mr Grey* said, echoing concerns articulated twenty years ago (Richardson, 2003, p. 1627). This statement received agreement from all participants, but no one chose to expand upon it with details about what particular modules were being referred to.

One respondent highlighted that "It was my tutorials that I received the most about pedagogy" but didn't elaborate on modes or methods employed in his experience. The other respondents focussed on their methodology lectures in their responses about their experience of pedagogy at the HEI. Their experience was mixed. On reflection, some remembered a significant focus on transmission of subject specification content, akin to a traditional lecture, "In methods class there was an awful lot of syllabus and there's an awful lot to cover; so it was intense for a while", *Ms White*. "It was really about getting through content and syllabus but there wasn't a huge amount of pedagogy", *Mr Purple*. They intonated that they were passive recipients in this transaction.

Others highlighted a technique used by teacher educators in methodology classes which focussed on the PSTs performing the tasks as if they were the 2nd level students in one of their own classes. "They would go through the activity without teaching it to us, but just say we are going to do this now. And then at the end, ok, that was how you teach that particular aspect of the course", *Ms Jade*. "He'd actually make us do that activity…and we'd have to do it in class and then we'd learn from that because we

have done it, so it sticks in your head", *Ms Lilac*. "Had us doing the activities that we could get the students to do as well", *Ms White*. Respondents particularly found the collaborative nature of active methodological sessions, "doing more like group work", *Ms White* and "able to do loads of different lessons with each other, try out the practical experiments before we tried them in the actual class ourselves", *Mr Grey*, very helpful as they found working with their peers less threatening and more productive.

As emerged in earlier data analysis the practicalities of attending the university site were mentioned by the respondents in the Focus Group. They mentioned the challenges of commuting and frustration with securing parking under extreme time pressure, *Mr Purple, Mr Grey*. Mr Grey specifically called for the programme coordinators to consider this when planning the timetable as he felt they could reduce the number of days that PSTs had to attend the university. This was reconnected with a preference for being in school more consistently so that you could more quickly establish yourself in your practice there, *Mr Purple, Ms Lilac*.

Reflection as an Improvement Process

The Focus Group also addressed the attitude of the respondents towards the acts of planning and reflection prescribed by the professional portfolio in their PME. The potential for this medium to stimulate deep and meaningful reflective conversations at the juncture combining theory and practice has already been mentioned in Chapter 3. A critical perspective, presenting potential flaws and weakness in the medium, was also discussed in the same chapter. As a means to uncover the pedagogical understandings and practices of the respondents, this phase of the research aimed to attitudinally explore their mind-set in hindsight towards the portfolio process. This exploration aimed to uncover the extent of their commitment to the planning and reflection process. This study suggests that the level of the respondents' reported commitment is important in relation to the validity of their engagement with the reflective process.

In relation to the lesson planning and preparation aspect within the portfolios, there was a measured and reasoned response. The lesson plan was seen as a support, "A portfolio is good to have", *Ms Lilac*, "having the timesheet gave you a little bit of a skeleton I suppose in the classroom", *Ms Jade*, "It was setting us up for things like schemes of work", *Mr Grey*. However, there were frustrations about the prescriptive nature of the lesson plans, "I learned very quickly that there could be a fire drill or an announcement…and you'd have to improvise as well" *Ms White,* but also an acknowledgement that through engaging with the individual lesson plans, they incrementally built capacity towards being able to construct broader schemes of work. "Planning kind of monthly and weekly rather than by every block of five minutes within a class", *Mr Purple*. They also felt that the time spent decoding learning outcomes and intentions and reflecting on practice were helpful in some instances. "I thought it [portfolio] really helped prepare us like when it came to learning outcomes and learning objectives and all that kind of stuff" *Mr Purple*.

The reflective practice aspect of the lesson plans received a mixed response. Some genuinely appreciated the process of reflection "I felt that sometimes it was a bit of a release even reflecting on it and just letting it go", *Ms White*. "The reflective thought process helped me subconsciously plan for my next class teaching that topic or particular class group", *Mr Brown*. Others felt the reflections were forced and contrived, "What the hell can I put down here without trying to look desperate to find something wrong or good in your lesson?", *Mr Grey*. "There was an awful lot of trying to find things to reflect on that weren't particularly substantial anyway", *Mr Purple*.

There seemed to be a consistent challenge to engage with a depth of reflection which integrated theoretical knowledge and craft experience. In relation to connecting selected practice to academic theories, one stated that: "I didn't know who to quote or how to quote them", *Mr Grey*. The Focus Group conversation strongly suggested that the complexity of practice was not conveyed, revealed or imparted to them at this stage of their development "reflection is brilliant if there is something to reflect on", *Mr Purple*, "then I was just like waffling", *Ms Lilac*. As such they were only reflecting on basic concerns such as, whether they controlled the class and covered the desired

content. One respondent's observation clearly highlighted a misconception of the reflective purpose of the portfolio; "I felt guilty for the first few months that I didn't get all the content covered. And then in another way if I did get the content covered, did I cover correctly because did I speed through it, or go too slow", *Ms Jade*.

Even at the end of second year the incremental complexity of teaching and learning practice, which is available for constructive reflection, did not generally seem openly apparent to the respondents. This reality for these respondents unveiled itself in their reasoning and responses during the Focus Group. "Really just a box ticking exercise for the inspectors, *Mr Purple*, "If you document everything you want to do, it just takes too much time, *Ms Lilac*, "It was a lot of work at the start with very little benefit from it", *Mr Grey*. There is a dilemma here for teacher educators. The novice teacher is preoccupied with the immediate general pedagogical problems that their practice presents. They are focussed on becoming fluent with their subject knowledge and controlling the class. This focus can blinker them to the pedagogical and cognitive complexities which underpin their pedagogical understanding and practice. Also, they are either unaware of the complex interplay between theoretical knowledge and practical knowledge or aware of it and unwilling to engage as it is too complex, they require more support and/or they are time poor.

Summary

Through the analysis of the credos, portfolio and focus group, this study explored PSTs' (n=15) capacity to understand and practice the pedagogical skills conceptualisations outlined in the current generation of curricular and teaching practice policies. The following summates the findings which emerged from these analyses:

Pedagogical Dispositions

A range of pedagogical dispositions and orientations were displayed both in person and in the reflections of the respondents. The dominant disposition that emerged in the analysed lesson plans is that of a teacher centric content transmission style. The Focus Group participants acknowledged this about their first-year practice. However, their Credos written concurrently with their lesson planning express more constructivist leanings. The respondents claim that they would like to continue to improve how they unveil the proposed learning for their learners, yet their pedagogical understandings of 'modern teaching and learning' were emergent and tentative in most cases. Their immediate concerns around content knowledge, establishing themselves in the school, classroom management and personal stresses may be influencing the translation of their tentative dispositions into consistent practices?

Pre-Lesson Pedagogical Deliberations

The immediate concerns mentioned above have a significant influence on the pre-lesson pedagogical deliberations of the respondents. Their predominant worry concerns their own subject knowledge and the extent of material to cover in any one class. Deliberations on the substantive and the syntactic disciplinary framework and on the explicit learning intentions employed to suit the learning context only exist in a minority of the lesson plans explored. These are complemented by consideration for the perspective of the learner and suitable analogies and macro questions to employ to stimulate meaning and interest in the learning.

However, learners in the lessons are often expected to draw on insubstantial life experience and to attempt complex learning tasks with little or no scaffolding or structure. Much of the pre-lesson preparation for many of the lessons focuses on definitions and keywords related to the section or content under consideration. The respondents report that the process of translating learning outcomes to learning intentions is extremely challenging. A consumerist or transactional approach was evident when deploying theory which the PSTs were exposed to during their HEI based PME programme. Often, observed tips and tricks were transported uncritically into the PST's classroom without a depth of understanding or contextually dependant knowledge about how or why a particular method might be successful? The findings of

this study strongly suggest that the desired deep clinical integration of theory and practice in the teacher education continuum is significantly challenging to enact.

Pedagogical Approaches/Instructional Techniques

There were small pedagogical 'pockets of wonderfulness' evident throughout the sampled lesson plans. Reinforcement of past learning, modelling looked for practice, meaning making, and student-centred discovery-based learning were all observed in a minority of lessons. However, these 'pockets of wonderfulness' were overshadowed by nearly three quarters of the lessons using learning intentions exclusively to identify the content to be covered. PowerPoint, transcribing notes and highlighting or underlining textbooks were dominant teaching and learning practices.

The context, where the respondents were taking their first tentative steps into a complex profession and practice, must be remembered. That this was a purposefully selected sample representative of the top 20% in that given year in that programme of ITE should also be foregrounded. A mixture of inexperience, behaviour management issues, lack of subject knowledge confidence, absence of a structure of pedagogical criticality, or advice from more established colleagues all contributed to the predominant pedagogy documented in the portfolios being a transmission/lecture style. Keeping 2nd level students busy seems to lead to keeping them quiet according to the observations of some of the respondents.

A broad range of practices for catering for different levels of learning capacity in the classroom were noted. Theory from the PME and practice at the school placement site came into conflict with the practices of the school and the cooperating teacher being more influential. The dominant content transmission style in the majority of lessons seems to have contributed significantly to the style of differentiation employed. Limited differentiation practices, involving ranged dialogic questioning and group work between a 'strong' and 'weak' student, subordinate any other potential practices. The

moulding of these onto a teacher centric lecture style sems to preclude the PST from experimenting with differing pace, task, and outcomes options.

Participants in the Focus Group reported that they had significantly moved on in their pedagogical understanding and practice in the year since they completed their portfolios. They critiqued themselves for some of their previous practice and confidently gave examples of how they approach their lessons differently following the passage of a full year. Building on the learner's knowledge, experience, and interest was now seen as a crucial approach, but an approach that, in turn, demands a considerable and onerous amount of pre-lesson planning on the teacher's part. However, their resultant revised pedagogical reasonings were very general and mainly focussed on the introduction of 'active learning' over passive transmission. There were still significant suggestions that the depth of pedagogical understanding for a rationale for employing certain methodologies or strategies was shallow or emergent.

External Factors Influencing reasoned pedagogical understanding and action

The participants referred to several external factors that impacted on their pedagogical reasoning and action. These are mainly comprehended by personal concerns, school placement factors and university contentions.

Each of the respondents is an individual with a range of personal concerns from the familial to the financial. They are attempting to navigate these while also being enrolled in a time and energy intensive teacher preparation course. Many speak about commutes, work life balance, part-time jobs, and dramatic role change from being a student to being a responsible professional as significantly burdensome in the context of the demands placed on them by the placement and the HEI.

Within the placement they navigate political staffroom issues, inconsistent cooperating teacher measures, demand for quiet classrooms and conservative in-career teaching practice, which ignores the advent of Junior Cycle. There is little evidence of formal planning and/or feedback meetings between cooperating teachers and PSTs. Snatched conversations are described by the respondents and this does little

to alleviate their very real classroom management and subject content knowledge concerns.

Trying to translate their HEI learning into placement sites where textbooks and terminal examinations can dominate is seen as extremely challenging. Starting one month in the placement site before the PME commences can be quite influential in the PSTs reverting to observed practices from their own time as students. Positive moments from their HEI experience were spoken about. However, they are overshadowed by a perception of lecture-oriented sessions without interaction and methodology provision where the PSTs observe modelled teaching as if they were 2nd level students themselves; the objective being for them to mimic the practice in their own classrooms. The way the PSTs describe this process suggests that this mimicry happens in an uncritical manner.

Reflection as an improvement process

Although all respondents engage in reflective practice in their lesson portfolios, only one third of the sample chose to explicitly speak about reflective practice in their *Credos*. The remainder focussed on other concerns in this section. This could be interpreted as the priority they assign to the practice, or the difficulties that they have encountered in developing the capacity to reflect, employing a deep clinical integration of pedagogical theory and practice. In the lesson plans the reflections focussed on their in-class experiences. Many are concerned about their style of teaching; they observe that content coverage is boring for both student and teacher alike. They realise that they have an over-reliance on the strategy of oral explanation and that this does not routinely result in the learner gaining a deeper understanding of the targeted learning. There is an acknowledgement that the levels of planning and premeditation pre-lesson required to arrest this scenario is considerable.

The Focus Group aimed to explore the level of commitment the respondents had to the reflective practice process. Participants gave a measured and reasoned response. They felt that in the initial phase of their course, the levels of planning and reflection

helped to build a structure for lessons. However, their pedagogical considerations were of the shallow variety, preoccupied with the more immediate practical content knowledge and behavioural management concerns. One year later it was still evident that they struggled to consider or comprehend integrated theoretical and practice reflections. They did not seem to have considered the depth and complexity potential of pedagogical questions within reflective practice, or had done so and decided that it was too onerous, or they were insufficiently equipped to do so.

Chapter 7: Discussion

Introduction

Over a decade ago I personally and professionally struggled, moving from a pedagogical approach which was dominated by content transmission, to one which instead focussed on the learner's perspective while constructing new learning. I wrestled with this painful process, in both my first and second order teaching practice. It was a personal and professional vicissitude, which involved a considerable volume of researching, trialling, creating, and reflecting. It took years of initial effort, and still requires attention in enactment for any of my teaching practice. It was the experience of this challenge which kindled my interest in researching how the implementation process of authentic constructivist pedagogical practice was progressing at the systemic level, following the publication of a new generation of educational policies which focus on Irish lower secondary teaching and learning.

In the recent Irish educational policy context, it is important to highlight that the role, value, and practice change required of teachers is significant, even paradigmatic. Additionally, "following a long gestation, a great deal of change is now being compacted in a short period" (Coolahan, 2013, p. 9). *Learning Outcomes: An International Perspective* (2019) was commissioned by the NCCA with the purpose of critically assessing five other jurisdictions' actions and experiences with their implementation of outcomes-oriented curricula. In this report the curriculum body openly admits that their pedagogical reform process, as described by the current generation of policies analysed in this study, is exacting and complex, "the expectation that teachers use constructive forms of pedagogy to engage students in developing deep understanding and powerful knowledge involves a significant change in both personal and professional beliefs, as well as an increase in pedagogical content knowledge and disciplinary knowledge" (NCCA, 2019, p. 5).

They further admit that the Irish context into which this significant looked-for change is introduced is influential; "where teachers have been accustomed to having content specified, and where there are long-established conventions of mainstream schooling that reward the acquisition of disciplinary knowledge and performance in external examinations", this type of change will be challenging (NCCA, 2019, p. 71). It is in the space of the consequent belief change and PCK development that this study has

focussed its attention. The NCCA's acknowledged 'significant' change suggests that any jurisdiction's teaching profession would need substantial support from government and teacher education sources to accomplish this role transformation even partially.

Reminder of Chapter Four's response to Research Question 1

The literature review and policy analysis chapters of this study explored the degree to which this complexity had been acknowledged in the published policies, and how much the implementation of said pedagogical complexity had begun to influence the teacher education continuum, specifically in its *Initial* phase. This research and analysis work suggested, according to this study's PST respondents, that local and international policy intent and implementation forewarnings did not significantly influence the strategies that they experienced during the deployment of this tranche of educational policy. The desktop policy analysis also suggested that there are examples of divergence between the major policy actors who are influential in policy design and deployment. This earlier work, which formed a response to the first research question of this study **(RQ1)** are reminded here so that the reader can locate the PST's pedagogical understandings and practice contextually while they engage with the ensuing discussions and responses to the other research questions.

The central role of this study's subsequent policy analysis process was to generate an explorative pedagogical lens which could be used to analyse the portfolios of the documented emergent pedagogical understandings and practice efforts of a cohort of PST students in one HEI teacher preparation programme. The interest here was in how these respondents were managing with developing the pedagogical role mandated for them in a human context where personal and systemic factors have the ability to influence that development. As a result of the policy analysis the conceptualisation of pedagogical understanding and practice intended by the policy makers was subdivided into four principal concerns: (1). values and beliefs, (2). pre-lesson deliberations, (3). documented pedagogical approaches and strategies, and (4). reflective practice. This study suggests that these are keystone capacities that require promotion in the pedagogical preparation of those learning to teach. That is if they are to be readied for

the pedagogical policy intent as outlined in the current generation of educational policy.

Response to Research Question 2

To what extent are the pedagogical development experiences of the sampled PSTs aligned with the pedagogical intent established by this study's policy analysis?

Transmission: The intransigent pedagogical strategy

This current study's literature review presented pedagogical findings from two longitudinal pieces of Irish based research (Hogan et al., 2007; Smyth, 2009; Smyth et al., 2007; Smyth et al., 2006; Smyth et al., 2004). Both highlighted dominant transmission pedagogical strategies in the sample they observed. Hogan's research opined that "Textbooks frequently took much of the real initiative in teaching away from the teachers themselves" (Hogan et al., 2007, p. 28). According to Smyth's observations, the learners became disengaged by lessons dominated by textbooks and teacher talk. In another piece of more recent Irish research, which focussed on Leaving Certificate student experiences, over 60% of student respondents reported teachers reading from the book or learners copying notes from the board as prevalent teaching methods (Smyth et al., 2011, p. 43). 75% reported practicing exam papers as a utilised method and almost 90% experienced the teacher doing most of the talking as the dominant pedagogical practice in their classes (Smyth et al., 2011, p. 43).

More than a decade later, these teacher-centric practices are still evident in the pedagogical planning demonstrated by the respondents to this current study. As noted in the findings chapter, the majority of the lessons in 73% of the respondents' submissions, employed learning intentions as vehicles for what content they intended to transmit to the learners in that particular lesson. Physical note taking from the board, or a PowerPoint, was a common learner activity, even for those students who had a 1:1 tablet device. Many respondents also reported asking students to read from

or highlight the textbook without a clear purpose for utilising that particular strategy or resource. This study's content analysis process also uncovered examples where 'silence' and/or 'occupation' were presented as attention, engagement and/or learning. These findings reflect those from previous Irish studies which found textbooks and transmission strategies dominating classroom practice (Hogan et al., 2007; Smyth et al., 2007; Smyth et al., 2006; Smyth et al., 2004).

As Hogan's (2006) quote above noted, the reliance on a textbook, or the modern practice of PowerPoint notes created from textbook resources, removes a lot of the reasoning and creativity from the act of teaching. Shulman (1987) claimed that insufficient subject knowledge capacity, and/or confidence, has a direct correlation with conservative teacher-centric classroom practice. He called this "didactic strictly controlled recitation" (Shulman, 1987, p. 18) "the pedagogical price that is paid" (Shulman, 1986, p. 8). The correlation he suggested was that inadequate subject knowledge contributes to the prevalence of lecture presentation transmission strategies in the practice of teachers.

These pedagogical practices have a much greater knock-on effect to the teaching and learning experience than just the dominance of a transmission telling style, according to the evidence from this study. Respondents using these content transmission strategies also overestimated their students' skill or conceptual experience in lessons. Students were tasked with complex learning duties without scaffolding supports to underpin their endeavours. Active methodologies were also employed without evidence of reasoning or justification as to their appropriateness for facilitating the stated learning outcome.

PST Reflections on content transmission practice

Teacher education scholarship supports the view that planning is a core practice for learning to teach (Grossman et al., 2009; Jenset et al., 2018). This study's findings

suggested that the PST respondents are struggling to engage with complex pedagogical questions and concerns during their planning phase. Of course, it is acknowledged that if the specific policy looked for pedagogical understanding and practice was evident it would be at an emergent stage for the respondents, considering they have only had two years' teaching experience. This study's analysis scrutinised for nascent references, but they were rarely evident. Respondents did not consistently evidence the ability to think pedagogically or to employ pedagogical adaptivity. These findings echo Schon's description of the immiscible high hard ground of theory and swampy lowlands of practice (Schön, 1983), highlighting the segregated landscapes and broken links which are immensely challenging for PSTs to amalgamate.

The Focus Group participants were confident in evaluating some of their self-identified pedagogical practice errors and flaws. They acknowledged that they had relied on lecture/dialogic style teaching practice during *Year 1* but were now trying to experiment with more "active methodologies". However, these reflections were undermined by accompanying contradictory statements. Respondents stated that some of the HEI promoted active method theories seemed more like 'novelties' at this stage in their career, meaning they felt that they had moved beyond many of them. The sense gleaned from the focus group conversation was that they were still centrally focussed on content transmission and that recitative production of content was the learning that they generally looked for.

The respondents claimed to occasionally employ active methods to make the learner more involved and occupied in a learning process. However, these strategies tended to be deployed to make the learners active, but not necessarily engaged in an authentic co-constructive format of learning. The teaching strategy examples proffered suggested a more consumer approach to pedagogy, where ideas and methods were deployed with only surface understanding of the theoretical underpinnings of the strategy. Their responses suggest that, either they were not aware how to incorporate the academic theory which they engaged with at university with the practical clinical grappling of their everyday practice at the school site, or they did not perceive a need to do so. Either way they did not proffer examples of deep pedagogical reasoning during the discussion.

Other recent teacher education research from Ireland also suggests that PSTs struggle to see the value in non-transmission pedagogical strategies while in their teacher preparation course (Hinchion & Hall, 2016). The central respondent PST reflections of Hinchion's study were gathered from a period after the candidate had completed her teacher preparation. She specifically reflected on a *drama in education* technique employed by her university teacher educator. At the time, she could not comprehend the applicability of the strategy. In hindsight, with more experience, she could see its significance and how her naivety exposed her shallow pedagogical and subject content understanding (Hinchion & Hall, 2016).

The dominance of content transmission strategies, indicated by the findings of this delimited study, has consistently been highlighted in international learning to teach literature also (Freire, 2013; Korthagen et al., 2006; Loughran, 2019; Loughran & Hamilton, 2016). This current study reports that an over-reliance on a direct instruction style combined with a self-reported deficient subject content knowledge contributes to anxiety in the classroom experience and a further erosion of the novice teacher's confidence.

Enabling conditions for constructivist influenced planning

Although the dominant recorded pedagogical enactment strategy was content transmission, a range of pedagogical dispositions were professed in the PST's planning documents. They ranged from those who dismissed constructivist ideology outright, to those who championed it ideologically, but still documented a dominant content transmission practice. Occasionally, there were planning examples where the PST's confident subject knowledge, a clear understanding of the unique learning context of learner interests, capacities and prior knowledge, a relationship with the class built on trust, and a flash of creativity amalgamated to deliver a student-centred constructivist style lesson. These factors enabled the teacher to partially release control, to permit a learner centred orientation. These lessons were initially devised because the teacher made a professional judgement that their particular context required an innovative

resource to connect the learners with the desired learning. These efforts focussed on providing a clarity of purpose to the learner and explicating the 'treasure within' the target discipline (Delors, 1998), that is, the conceptual, the skill development, the cross-curricular learning located within the relevant content knowledge. These infrequent (N=3/90) pedagogical efforts are very much aligned with how recent policy conceptualises pedagogical capacity (DES, 2015; Inspectorate, 2016).

The infrequently witnessed purpose seeking process (N = 3/90), which involves disassembling the teacher's subject knowledge in order to reassemble it into pedagogically powerful ways to connect with young learners, is also a practice strongly aligned to that pedagogical conceptualisation. Clarity of purpose, which can be explicitly explained to the young learners in the classroom, is also a crucial element of Shulman's PCK framework (Carlson et al., 2015) and Loughran's connected enactment process (Loughran et al., 2004). It requires independent pedagogical reasoning and/or research on the part of the teacher reflecting their contextual reality. This process of pre-lesson reasoning is a key activity to disrupt the practice of content transmission dominating the learning and teaching process. Revealing the conceptual understanding, the skill development and the potential thinking strategies of the subject discipline can help empower the learner towards more autonomous learning (Richardson, 2003; Yilmaz, 2008).

These are tentative green shoots which suggest that when supporting factors are present in the context of the PST's lesson preparation and planning, they are willing, and have the capacity, to engage in this style of constructivist teaching. However, according to the PST experience gathered as data by this study, the manifestation of this combination of factors was not common for them during their two-year teacher preparation programme.

Response to Research Question 3

What are the challenges/opportunities in developing pedagogical understanding and practice, in particular PCK, for PSTs during their ITE experience?

It is a broadly held view in the scholarship of teacher education that ITE is crucial for initiating an embryonic engagement for the PSTs that can be deepened and broadened as their career develops (Cochran-Smith, 2005; Darling-Hammond, 2017; Dewey, 1962; Feiman-Nemser, 2001; Lortie, 1975; Shulman, 1987; Shulman, 1986). The complex facilitation of pedagogical development as part of that embryonic engagement is said to be an extremely challenging undertaking (Korthagen, 2017a; Loughran, 2019). The integrated consistent support they need, across agents and sites, to promote and sustain this level of integrated complex practice, is suggested to be considerable, (Darling-Hammond, 2017; Darling-Hammond et al., 2017; Darling-Hammond et al., 2019; Hislop, 2011; Pasi Sahlberg, 2012; Tirri, 2014).

Internationally, the so called 'best performing ITE systems', such as Finland, Canada, Singapore and Australia are lauded for their focus on truly integrated forms of clinical preparation (Darling-Hammond, 2017). Seven university based ITE programmes in the United States have also been reviewed favourably for their integrated clinical focus which aims to authentically prepare teachers who can graduate with the capacity to create deep learning experiences within their subject discipline (Darling-Hammond et al., 2019). These reviews are part of a teacher education discourse that is increasingly influenced by practice centred strategies (Grossman et al., 2009; Jenset et al., 2018), an approach which this study promotes as an ITE format that can facilitate the development of clinical pedagogical thinking.

PCK spotlights the reconfiguration process that teachers' subject knowledge undergoes to become the content of instruction. This reconfiguration process is what Shulman coined as 'Teacher Education's Blind Spot', (Shulman, 1986). Thirty-five years ago, he opined that teacher education programmes were fixated by issues such as classroom management, direct instruction and questioning techniques. He believed that pre-service practitioners needed a lot more time "reasoning" on why specific pedagogical strategies were deployed at specific times? ITE programmes, in Shulman's opinion, needed to facilitate a lot more thinking space and time for PSTs to collaboratively reason on:

- Origin of teacher explanations
- Choice of subject priorities
- Formulating key questions
- Analogising key learning
- Reconfiguring subject content

If teacher education research suggests that content transmission practices dominate in learning to teach environments, this study argues that teacher education providers must find more ways to provide safe spaces for PSTs to further develop clinical/craft knowledge through pedagogical experimentation. Inexperienced teachers need time to explore the learning perspective of their students. They need support to anticipate the learning sequencing, structure and scaffolding required to facilitate learner centred lessons. It is reasonable to suggest that the more collaborative opportunities orchestrated for these novice practitioners where they can experientially observe authentic constructivist strategies, recalibrating the learning and teaching dynamic in the classroom, the more likelihood there is of them enacting them independently at their school site.

This study further argues its PCK framework (see figure 4.1) is an appropriate construct to both further examine, and influence, pedagogical development in teacher preparation. The PCK framework, which employs Loughran's constructs into its lens for exploring pedagogical understanding and practice, assists teachers to parse and unveil hidden subject disciplinary learning during their planning and delivery phases. "CoRe research reinforces the notion that it is through the pedagogical reasoning underpinning teaching procedure that teachers' professional knowledge is able to be better recognised, articulated and portrayed" (Loughran, 2019, p. 531). CoRes and PaPers have been positively deployed worldwide in teacher preparation programmes from the Far East to Mexico and from South Africa to the Netherlands (Alvarado et al., 2015; Attorps & Kellner, 2017; Bertram & Loughran, 2012; Hume & Berry, 2011; Rollnick et al., 2008; Zhang & Wang, 2014).

However CoRe enactment requires careful integration on any programme, acknowledging knowledge boundaries (Feiman-Nemser, 2012; Zeichner, 2010). Previous studies suggest that exemplar CoRes devised by an experienced teacher educator, together with key incremental questions can help inexperienced PSTs to engage authentically with the reasoning process, (Hume & Berry, 2011; Loughran, Mulhall, et al., 2008). The scaffolding questions essentially facilitate the PSTs to consider the current status and capacity of their intended learners, the proposed learning outcome or destination, the sequencing required to support the journey, and finally the resources they could create or source which would leverage powerful learning experiences (Hume & Berry, 2011, pp. 347-348).

Grossman contended that a *transformative* ITE environment would acknowledge its location at the confluence between theory and practice, between the learning at the teaching site and the university, and focus on parsing high leverage PST teaching practices to form experiences which enable complex integration at the boundaries of knowledge types (Grossman et al., 2009, p. 283). According to Grossman these 'approximations' could provide opportunities for PSTs to rehearse and enact discrete components of practice with access to the coaching oversight of university-based teacher educators. What Shulman coined as the 'clinical', (Shulman, 1987) can potentially be more successfully fostered in interactive sessions, which have as their focus carefully chosen proximal dilemmas, (Korthagen, 2016). These carefully chosen clinically rich approximations deliberately expose the PSTs to knowledge and pedagogical conundrums. They are formed from "practices that occur with high frequency in teaching, that novice teachers can begin to master, and which preserve the integrity and complexity of teaching", (Grossman et al., 2009). Proponents suggest that this process is about focussing on forming stable professional identities over the development of adequate behaviour, and striving for the 'holy grail'; that is, positively influencing daily teaching practices in schools (Darling-Hammond, 2006; Feiman-Nemser, 2012; Korthagen, 2016).

In alignment with Britzman (2012), this study is not recommending an instrumentalist apprenticeship style teacher education programme that focuses on trivial atomised teaching practices. It is advocating for a more complex explicit interplay between

theoretical and practical teacher knowledge echoing calls of ITE reviewers in Ireland over the last ten years (Sahlberg, 2012; Sahlberg & Hyland, 2019). As Fenstermacher stated, the goal of teacher education is not to indoctrinate teachers to perform in prescribed ways but to educate them to reason soundly and perform skilfully (Fenstermacher, 1986).

Nevertheless, there are systemic alterations to the traditional foundations and practicum structure of Irish PME programmes required if the implementation of these 'approximations of practice' is to be successful, (Loughran, Korthagen, et al., 2008). This knowledge domain integration process is regularly cited as a formidable challenge (Schön, 1983; Zeichner, 2010). Even if this is achieved there are further concerns about competing discourses between the different teacher education sites. Recent research suggests that knowledge and skills that were developed through 'approximations of practice' on a university programme were not guaranteed legitimacy at connected school sites (Trent, 2013).

Findings, relating to opportunities for this study's respondents to engage with pedagogical reasoning in their PME would suggest that the HEI programme could substantially increase opportunities for developing authentic, clinical/craft knowledge. The findings of this study clearly indicate that the respondent PSTs believe that the opportunities for pedagogical reasoning, in a safe space, with a skilled experienced teacher educator, who can blend theoretical and practical knowledge in an authentic and complex manner, are currently not sufficient, echoing earlier similarly focussed research (Levine & Marcus, 2010).

It is my opinion that employing a construct such as Grossman's can influence the development of structured resources for ITE to assist programmes with increasing their focus on clinical/craft practice development in the learning to teach process. We can be enthused by the findings of research which suggest that participation in clinical experiences during teacher education impacts positively on PSTs (Boyd et al., 2008; Boyd et al., 2009). The PSTs themselves have also indicated in research that extensive clinical engagement is crucial to their early development as teachers (Levine & Marcus, 2010).

The influence of personal Values and Beliefs

The opening section of this discussion chapter addressed the existence and facilitation of PST pedagogical understanding and practice from a theoretical and clinical perspective. However, the individuals learning to teach are humans and as such are influenced by the human condition. Their hopes, dreams, worries, apprehensions and values and beliefs are all prevalent and influential as they engage with the process developing pedagogical understanding and practice.

"Excluding teacher beliefs from any teacher training experience is tantamount to ignoring the importance of prior knowledge in student learning" (Haney & McArthur, 2002). As this study's literature review suggested, it is challenging to expect that ingrained system memory, and possible pedagogical convictions, could be disrupted within a single year of pre-service study and practice (Raths, 2001). The importance of 'renegotiating' PST's 'cultural scripts' has been highlighted in an Irish context for over a decade (Conway et al., 2011, p. 31). Swift success in challenging and disrupting ingrained system memory and convictions has not been the experience in other jurisdictions who have tried to implement similar pedagogical role changes.

Beliefs are consistently referred to as crucial if teacher agency is to align with the intent of curriculum/policy makers (Biesta et al., 2015; Pajares, 1992). A *Classroom Learning Environment Survey* (CLES), was created in 1994 to enable the analysis of teachers' constructivist belief structure (Taylor et al., 1994). The construct describes PST's core and peripheral beliefs (Cialdini et al., 1981) in relation to teaching, on the premise that beliefs are precursors to action. According to a study which enacted the CLES construct, core beliefs are both stated and enacted, while peripheral beliefs are stated and not enacted (Haney & McArthur, 2002).

This study's findings documented a dominance of what Haney et al (2002) called 'conflict core beliefs', enactments that conflicted with professed constructivist ideology. Interestingly similar inconsistencies have been documented in other jurisdictions' learning to teach research. One of the causal factors suggested was that

teachers were able to assimilate the messages of reform without fundamentally altering their enactment practices (Biesta et al., 2015). This is congruent with another piece of international research mentioned during this study's policy analysis chapter (De Souza, 2018). De Souza found that the teachers he reviewed were not used to asking questions, such as what knowledge is of most worth in my subject and why? There was a sense of them "tinkering around the edges", (De Souza, 2018), with hybrid pedagogies which veneer entrenched transmissive teacher centric practices.

The recently published NCCA Report (2019), which reviews five jurisdictions' experiences in attempting to implement a similar curricular and practice change as Ireland is engaging with now, generally describes initial positive teacher disposition morphing to burn out when the volume of work required to create and construct these types of learning experiences became evident. Involvement in the curriculum design became suspiciously interpreted as tokenistic or contrived co-construction, (NCCA, 2019). System memory was cited as being extremely influential in obstructing the looked-for practice change. Disciplinary and pedagogical values and beliefs and conceptual levels of understanding made it challenging for practitioners to authentically implement the sought pedagogical changes. Those reviewed were not used to asking questions, such as what knowledge is of most worth in my subject and why and their reported levels of subject discipline knowledge made it very difficult for them to commence the practice (NCCA, 2019).

Tirri suggests that belief altering pedagogical processes such as these take five years in Finland (Tirri, 2014; Woodbury & Gess-Newsome, 2002). As Morine Dershimer and Corrigan put it in their twenty-year research on teacher thinking, "The strength of traditional prior beliefs, reinforced by experiences as students and teachers, makes real change extremely difficult. Teachers implementing mandated changes interpret those mandates through the screen of their prior beliefs, modifying…desired reform strategies. New practices require new beliefs", (Morine-Dershimer & Corrigan, 1997). Continuing and deepening the process of challenging or encouraging cultural scripts is crucial in Irish ITE especially in the context where this study has clearly identified the policy mandate for significant pedagogical role change in teachers. Even though the process is consistently reported as challenging, ascertaining participant PST

pedagogical beliefs and contending with them provocatively must still be a central priority in teacher preparation programmes.

Although regularly professed in the portfolio writings as their preferred pedagogical ideology, constructivist practices, which in general align with the desired policy sought pedagogical understandings and practices, are not often evident amongst the respondents' lesson plans and reflections in this study. Despite 66% of the PSTs (n =10/15), representing explicitly with constructivist dispositions and beliefs in their reflections, their actual recorded pedagogical practices and understandings present inconsistently across time with transmission practices dominating. There are even examples of pedagogical inconsistency between subject areas of the same respondent (Ms Indigo, Mr Purple), where the pedagogical styles, between the stronger preferred subject discipline and the perceived weaker one, are significantly different. Bandura correlated similar findings in his research with the influence of confidence. Less confidence on the subject matter influenced subsequent commitment and effort into practice development (Bandura, 1986). The inconsistency evident in the findings of this delimited study suggest two plausible conclusions; that the will to recalibrate practice is not strong enough in this cohort of respondents (Dolan, 2017b; Korthagen & Kessels, 1999), or that they wish to initiate change, but struggle due to a belief that they do not receive sufficient support and scaffolding to do so from their teacher educators (Shulman, 1987).

This study's data analysis and focus group experience would tend to concur with international research findings portraying stubborn deeply rooted values and beliefs about teaching and learning in those participating in this teacher education programme. Beyond this shared finding, this study further suggests that a number of extra factors could be influencing this inconsistency between professed belief and documented practice evidence. In the Focus Group the respondents, when speaking about their early pressurised teaching practice experience, mentioned reverting their practice to what they knew from observational experience (Lortie, 1975). They quickly found themselves reading the textbook to their students as their former teachers had done to them. They reported that their confidence in their role as a teacher and their command of subject knowledge encouraged them not to relinquish learning control to

their students. They also freely admitted that they did not have sufficient practicum experience or disciplinary knowledge to translate the theoretical into sequenced and scaffolded learning experiences.

This study has already recommended further focus on the cognitive aspects of teacher preparation that can scaffold pedagogical adaptivity in a safe space. The expansion of 'confronting the candidate with dissonance' is also required to recalibrate pedagogical understandings and dispositions, (Raths, 2001). These moments of dissonance can be crafted from opportunities for coaching, observation and feedback from experienced practitioners and engagement at a complex level with subject matter and pedagogical possibilities, (Conway et al., 2009).

This study's opinion relating to the centrality of values and beliefs in the learning to teach process is supported in the Teaching Council's recently published *Céim* policy. In this updated set of standards for ITE (Council, 2020a), the Council have stated that all HEI's who provide teacher education programmes shall be underpinned by a clearly defined conceptual framework which will be conceived "in the context of their particular mission and ethos and shall be informed by research and by the Council's *Policy on the Continuum of Teacher Education* and its *Code of Professional Conduct for Teachers*" (Council, 2020a, p. 9). HEI's are expected to demonstrate that one of their core elements will be support for the development of the PST's 'professional identity and agency' (Council, 2020a, p. 14). The graduates themselves are expected to be able to demonstrate an ability to "individually, and in collaboration with colleagues, reflect on his/her attitudes, and beliefs about teaching and learning which inform and guide his/her professional practice" (Council, 2020a, p. 23).

Personal apprehensions

This study focusses on pedagogical understanding and reasoning as a key teaching capacity. However, this should not be considered in a vacuum. Teachers are attempting to develop these capacities in a context of what has been termed as an affected world of emotional scenery (Britzman, 2012). This study's sample report that

they are balancing a number of personal tensions while learning to teach. College attendance, commuter travel, researching and writing, teaching, planning, correcting, and for most a part-time job to help with considerable fees all grapple for attention. The cost factor of the extended PME programme, and its accompanying anxiety, has been highlighted elsewhere in the literature also (Byrne & Prendergast, 2020; Hyland, 2018).

These respondents certainly intonated that they are stressed and profoundly time poor. Not knowing students' names and not understanding the school's local context were all mentioned as added personal stresses to developing progressive teaching practices which aligned with theoretical explorations undertaken at the university. These are concerns that have been mirrored in findings, from hundreds of studies reviewed by Fantilli et al on PST's experiences across the last 40 years (Fantilli & McDougall, 2009). Classroom management, differentiation, time constraints, workload and mental health concerns were all highlighted as significant personal concerns by teachers in their first years (Fantilli & McDougall, 2009).

The outcome of this study's analysis on the intent of policy makers and the realities of policy implementation has raised consistent concerns. This is an example of where intent has not sufficiently considered reality. The findings of this study suggest that the constructivist, creative, adaptive learner centred teacher role, looked for by this current generation of curriculum and policy does not come naturally to this specific sample of PST respondents. This means that they are being asked to recalibrate deeply held values and beliefs on what good/effective teaching and learning looks like. They are being asked to do this in the context of self-reported stressful circumstances where they are struggling to survive practically and mentally. Consequently, efforts by teacher preparation programmes to "to strengthen certain dispositions in our candidates' repertoire" (Raths, 2001, p. 7) will need to be mindful of, and make provision for personal worries and stresses that are brought to the programme by its participants.

A key pedagogical ingredient: Subject content knowledge

This study's findings further suggest that there is a correlation between a lack of subject knowledge and these respondent PSTs employing conservative teachercentric pedagogical practices in order to maintain a semblance of control in their classes. This could be a contributing factor to the high level of loyalty to presentation/lecture style classes, focussing on the transmission of facts, (Hume & Berry, 2011; Loughran, Mulhall, et al., 2008) that were submitted within the respondents' portfolios. There is less risk involved if the content is on a slide or if the textbook is used as the primary source. Darling-Hammond has consistently promoted that "teaching for problem solving, invention, and application of knowledge requires teachers with deep and flexible knowledge of subject matter who understand how to represent ideas in powerful ways" (Darling-Hammond, 2000, pp. 166,167, 2012, 2017). Shulman himself opined that "teacher comprehension is even more critical for the inquiry-oriented classroom than for its didactic alternative" (Shulman, 1987, p. 7). Both stances echo what has emerged from this study.

In their portfolio reflection the respondent PSTs to this study regularly questioned the impact their emergent subject knowledge might be having on the learning and teaching process in their classrooms. When confidence is fragile, research suggests that it is unlikely for PSTs to opt for sharing control in their classroom, a prerequisite for a learner centred constructivist experience (Haney & McArthur, 2002). The unpredictability and risk taking required for this style of teaching potentially suggest that novice teachers will not be in a position to regularly employ these strategies at their school site.

The impact that deficient content knowledge can have on novice teacher's practice is significant according to international research and the findings of this study. The negative influence that this can have on the realisation of the pedagogical policy intent of the current suite of policies focussed on lower secondary school in Ireland is considerable. This is indeed a quandary specifically for the consecutive ITE programmes. In his Irish ITE reviews, Sahlberg called for much closer cooperation between subject disciplines at undergraduate level and teacher education programmes (Pasi Sahlberg, 2012; Sahlberg & Hyland, 2019). It is the opinion of this study that early identification of prospective teachers in undergraduate programmes

and the potential of credits being earned for elective subject knowledge courses is something that is worthy of further investigation. The Teaching Council have addressed this in their criteria for subject teaching certification which was revised in 2017. However, I would sincerely worry about the Council's acknowledgement of, and respect for, subject knowledge. Only 60 credits of subject discipline knowledge is required, out of a 300 credit total, in order to be accredited as a subject teacher (Council, 2020b).

Support at the University Site

In the learning to teach field, PCK can be described as a pedagogically specific strand of the 'knowledge of practice' as coined by Cochran Smith et al (Cochran-Smith & Lytle, 1999a). The construct seeks to synergise 'knowledge in practice' with 'knowledge for practice'. Mansfield and Loughran argue that, within Cochrane-Smith's construct, teacher educators can find themselves in the position of contradictory practice if they employ 'telling' as the method to promote inquiry based lessons for PSTs with their own teenage students (Mansfield & Loughran, 2018). According to the sampled PST respondents, there is inconsistent structure and support in the programme which would facilitate them to engage in complex convergence thinking between pedagogical theory and practice. They report that a significant proportion of their HEI contact time is with transmission style lectures, delivered by academics without recent experience of classroom practice. This reported situation, if a factual representation of the programme, is concerning in a context where there has been the publication of a suite of policies which are demanding a very different pedagogical role from Irish teachers.

The PST perceptions documented by this study indicate that many of the university-based teacher educators they encounter have not personally implemented a constructivist influenced style of learning and teaching with young teenagers. They may have the theoretical understanding, but the craft knowledge and the language of experience are crucial also if a practice based teacher education is to come more to

the fore (Loughran, Korthagen, et al., 2008). Concerningly, this learning process for university based teacher educators has been suggested to be challenging and to require deep levels of commitment for success to be achieved (Peercy & Troyan, 2017). It is this study's position that teacher educator's increased blended knowledge and experience in areas, such as PCK, could advance the pedagogical enactment process for PSTs.

Admittedly, this research only gathered data from the perspective of the PST. National and international research has suggested that candidates on teacher education programmes are not always motivated to genuinely engage with educational theory, unless they have personal concerns about their existent style of teaching (Dolan, 2017b; Korthagen & Kessels, 1999). Similar motivations and concerns could have been influential on this study's respondents' reporting of what may have been focussed on by the HEI during the programme.

However, other international research, which focusses on strategies to facilitate Schon's (1983) immiscible constructs, claims to reveal pertinent clinical concerns demonstrated by the PME candidates when they are afforded the opportunity to discuss and reason collaboratively on their ITE programme. Employing small mentoring groups, led by teacher educators, Eriksson's (2017) research suggested that the teacher's role and teaching practice topics dominated the discourse. The thirty-three participants in her mentoring programme raised clinical and pedagogical dilemmas which concerned them relating to forms of knowledge and experience. They wanted to discuss informed classroom strategies for these and different learning and teaching aims with the experienced teacher educator mentor (Eriksson, 2017). These mentoring groups also seem to have afforded the participants the opportunity to articulate abstract disciplinary learning and teaching concerns. They specifically queried "how to apply abstract theoretical knowledge and transform it into a relevant and interesting content for the pupils" (Eriksson, 2017, p. 82). The task of interpreting, unveiling and parsing abstract concepts within their subject discipline was a consistent challenge for the respondent PSTs of this study also.

The dominant topics explored by PSTs within Eriksson's mentoring groups remarkably reflect PST PCK concerns generally suggested by the findings of this current study. The opportunities for in-depth discussion with teacher educators/cooperating teachers is also highlighted in other studies as being the most important learning experience in teacher preparation (Flores et al., 2014; Levine & Marcus, 2010). The evidence from this study suggests that facilitating more of these types of discussion sessions can potentially contribute to concentrating the PST's concern for pedagogical strategy and adaptability. The employment of more cognitive/pedagogical dissonance and disequilibrium in practical workshop sessions for the PSTs (Dewey, 1962; Loughran, 2019; Mansfield & Loughran, 2018; Piaget, 1964) may even initiate the eradication of Shulman's aforementioned teacher education 'blind spot'.

It must be acknowledged that this discussion is being written in the context of the introduction of a significantly influential publication in the Irish ITE landscape. The publication of the Teaching Council's *Céim:* (Council, 2020a) has presented the teacher education landscape with opportunity for reflection (Farrell, 2021). In this study's opinion the newly published document echoes principles of the current generation of policies which this study has engaged with. *Céim* purports to mandate, in a more explicit format, earlier ideological wishes for integrated transformative ITE in both learning to teach sites and knowledges, (Hislop, 2011; Pasi Sahlberg, 2012).

Céim's standards require that ITE foundations and practicum studies should be integrated and that modules should explicitly focus on connections between methods courses and the social context of practice in classrooms and schools (Council, 2020a). Programme design is directed to follow a spiral learning approach allowing for key concepts and topics to be revisited over the course of programmes in order to develop deeper understandings, (Council, 2020a, p. 12). It is further expected that the ITE programme candidates will: "develop the pedagogical expertise of student teachers, including subject specific pedagogical content knowledge" (Council, 2020a, p. 13). The standards document further states that this PCK development should assist the PST to be able to "demonstrate their ability to access, develop, adapt and use a variety of curriculum resources and materials for learning and teaching and to motivate, inspire, acknowledge and celebrate effort and success of the same" (Council, 2020a, p. 22).

Creating complex pedagogical dilemmas for PSTs, orchestrated by informed and experienced teacher educators, where the PSTs can employ their teacher reasoning through a synergy of research, practice, and reflection, could introduce more of the *why*? to complement and extend the *what*? and *how*? of pedagogical reasoning in ITE. Having spent a considerable period of time analysing three different data streams from this cohort, this study suggests that a transformative style teacher education, like that promoted by Darling-Hammond, Deng and Dewey, which challenges educational values and beliefs of the participants is also vital for initiating any recalibration process in the pedagogical belief systems of candidates for teacher education programmes, (Darling-Hammond et al., 2019; Deng & Gopinathan, 2003; Dewey, 1962). This transformative structure would benefit from being interwoven into the selection process for PSTs, similar to processes currently employed for entry to the medical professions in Ireland.

In-career practitioner support at school site

In the discussion section of the policy analysis chapter, this study explored the congruence between the intent of Irish policy making agents, as documented within the texts of their policies, and the pedagogical development realities experienced by this study's PST respondents. It also assessed the congruence between the central agents and agencies in relation to policy intent and implementation means. The delimited conclusions were that there was the potential for a lot more premeditated support for such a 2nd order role change in teachers' practice (Cuban, 1988).

I also argued that a consistently reported entrenched pedagogical conservatism in the Irish teaching profession could be awarded a more central contributing role to the devising and publication of the current suite of educational policies framing lower secondary teaching practice in Ireland. If it is accurate to conclude that the teaching profession are generally entrenched pedagogically, are adept at circumnavigating authentic practice change, and that policy makers acknowledgement of international forewarnings concerning the implementation of practice change policies such as these

could have been more developed, then how might these factors impact this study's respondents' experience learning to teach at their school sites?

It was stated above that for the emergent pedagogical understanding and capacity to propagate, significant consistency and coordination between the university and school site would be required. Many PSTs start teaching at their school site three to four weeks before their university based PME programme even starts and must survive what they refer to as a "sink or swim" period without formal theoretical support. This study's findings highlighted the PSTs acknowledging that their limited pedagogical repertoire encouraged them to adopt a 'university lecturing style' and to revert to what they had observed their own teachers do during their personal schooling experience. This echoes other international research where it has been suggested that the placement site has the power to 'wash out' HEI pedagogical notions and concepts, (Korthagen & Kessels, 1999; Zeichner & Tabachnick, 1981). This has structurally been the case in Ireland for those preparing to teach in the secondary system for many years (Conway et al., 2011).

The learning relational culture of the school, the support of their cooperating teacher and supervisor, behaviour management proficiency and the frequency and level of their assigned classes were all factors which this study's respondents referred to as either being supportive, or further undermining their levels of confidence and assuredness. Irregular classes, and the associated absence of contextual and relational knowledge, make the deployment of PCK influenced pedagogical strategies even more challenging for PSTs. Their portfolio reflections and Focus Group contributions suggest that these factors strongly influence the methods they choose to deploy in their classrooms and their disposition to, and expectation of, the teacher educators they engage with at their university site. This study would suggest that this 'sink or swim' environment is not the 'safe space' that might encourage the PST to pedagogically reason adapt and experiment.

This study's respondents report that, although some are facilitated to observe other teachers' practice in their school site, most are required to, or insist upon, teaching by themselves. It must be mentioned that, concurring with other research in Ireland, some PST respondents of this study still referred to being left alone as learners in

school sites (invisible) as a positive experience, because it meant they evaded potential evaluative observations (Conway et al., 2014). This is significant because it indicates that even if the necessary supports were provided for the PSTs, some may attempt to evade them. They report that this emanates from a confidence issue, and they prefer being on their own in the classroom.

The cooperating teacher is a key component in providing the necessary supports for the PST which combat some of the personal concerns mentioned above. Recent qualitative research on school placement, in another ITE programme in Ireland, found that there were a range of cooperating teacher experiences for the PSTs (Long et al., 2012). The respondents to this study ranged from those who felt 'isolated' to those that felt 'supported'. Long's research found more of the former than the latter. This study's findings reported respondents detailing snatched conversations with in-career colleagues about what sections of content they should cover in their classes.

In this recent report, commissioned by the Teaching Council, the authors, when speaking about the cooperating teacher dynamic, highlighted that the "key element in this support is the opportunity to observe teaching, co-plan and co-teach with their cooperating teacher… for the purposes of strengthening the integration of theory and practice, the development of an inquiry orientation, and an appreciation of the need to base professional decisions on evidence", (Hall et al., 2018, p. 11). Unfortunately, my localised study reports little or no evidence of professional pedagogically oriented conversations and planning meetings, where authentic discussions take place about prioritising disciplinary knowledge, and methods by which to best represent that knowledge to young learners. This finding concurs with Irish based research conducted a decade ago where it was found that the cooperation between in-career colleagues in Irish schools was of an exchange or coordination nature, with no significant evidence of comprehensive collaboration. This resulted in negligible opportunity for access to pedagogy for either in-career colleagues or PSTs seeking such mentoring (Conway et al., 2011).

When this current study's respondents speak positively about the relationship with their cooperating teacher, they still talk about snatched conversations moments before classes start, and general interactions about content or themes to be 'covered' within a set period of time. This absence of structured collaborative professional conversations where two parties discuss teaching strategies influenced by local contextuality, learning purpose and teacher's knowledge proficiency are what Hall et al also believed would be beneficial (Hall et al., 2018). This study strongly contends that this exchange/coordination experience of collaboration at the school site contributes to the PST candidate opting to enact a transmission/dialogical style of pedagogy. If as the research suggests that the power of the school site backwashes on the influence of the university and the dominant professional conversations are about the coverage of content, this study contends that PSTs will struggle to develop constructivist learner centred enactment practices in this context.

Perceptions of wider school site conditions

The individual relationship with the cooperating teacher occurs within a pervading institutional culture and structure. Data that emerged from this study suggests that this culture and structure influences the level of confidence that some PST respondents feel in enacting practice. One respondent commented about a pervading school culture of 'quietness equalling learning'. This was a factor for some leading to challenges with controlling a group of students while experimenting with a dynamic pedagogical style (Mr Brown & Mr Grey). Other respondents report teenagers, who only want notes to game the terminal assessment, challenging the young teacher who may want to experiment with alternative teaching methods.

A further respondent bemoaned that the teachers at their site continued to teach as if it was Junior Cert, ignoring the introduction of junior cycle. Some PSTs also spoke about being exposed to staffroom conversations they were uncomfortable with. These factors all seem to influence the level of confidence and comfort that these respondents feel at their placement site. According to them, this in turn influences their teaching practice. These feelings surfaced in other Irish ITE research and were coined as 'not belonging', a feeling so strong that it even elicited feelings of dread in

PSTs as breaktimes approached (Hinchion & Hall, 2016) because they would have to interact with their in-career colleagues

Further contextual challenges such as environments where textbooks and terminal examinations still dominate, even if they are not teaching exam classes (Ms Yellow L2, Ms Red L6, Mr Black L4 & Mr Purple L5) provide an arid landscape for pedagogical reasoning and experimentation. Some of this study's respondents are not being afforded the opportunity to observe a constructivist style being demonstrated by established practitioners in their school setting. According to them, that style of teaching is not always welcomed by the school leadership.

One theoretical perspective which has been employed to make sense of these wider influences on teacher formation is called *Occupational Socialisation* (Lawson, 1986). Lawson, focussing on the formation of physical education teachers, divides the socialisation process into three distinct influences: 1. *Acculturation* – the socialization effects from birth to commencement of the ITE programme, 2. *Professional Socialization* – the impact of ITE programmes and 3. *Organizational Socialization* – the influence of school culture on PSTs. Research employing this theoretical perspective claims that the effect of the acculturation and organisational socialisation far outweighs that of the professional socialisation (Curtner-Smith et al., 2008; McMahon & MacPhail, 2007).

The significance of this in light of the unveiled experiences of this study's respondents in the context of a policy mandated significant role change in teachers' practice cannot be underestimated. Almost a decade ago the Sahlberg report called for a closer partnership between the university and school site in Irish teacher preparation programmes (Pasi Sahlberg, 2012). More recently the Teaching Council's *Céim* document calls for student teachers to experience a supportive model of placement which facilitates professional conversational engagement between all partners, (Council, 2020a, p. 17). However, the document is lean on the structures that might be employed to ensure that there is an authenticity to these practices. According to the experiences and opinions of the PST respondents to this study, this has not been formally enacted in the programme that they participated in. We are aware that

Finland specifically lauds an approach where there are designated university schools which work preparing teachers (Hammerness et al., 2017; Tirri, 2014). It is very difficult to envisage how Irish HEIs can facilitate congruence in the pedagogical messages received by PSTs without more formal relationships with the influential cooperating teacher educators working in school sites.

This study recommends that an initial step that could be taken on this journey towards partnership between the teacher preparation sites would be to interrogate the applicability of an existing model that helps frame in-school teacher educators' thinking about how they can support the PST's journey in learning to teach. This discussion chapter has already made suggestions about how ITE programmes could increase the opportunities for clinical reasoning and pedagogical adaptivity. Considering *Organisational Socialization* (Lawson, 1986) research's contention about the influence of the school site, it is unlikely that reform of the university programme alone would have a pedagogically redefining impact.

Developing Expertise of Beginning Teachers (DEBT) is a distillation construct which attempts to make relevant research findings, that would be useful for teacher educators in schools, available to them (Burn et al., 2015; Burn et al., 2017). It was conceived within a school/university partnership in Oxford, England. The school-based teacher educator's ability to amalgamate research informed knowledge, aligned with the teacher preparation principles of the HEI, with their own contextual craft knowledge and rich understandings of student capacities, could unveil powerful learning opportunities for the novice teacher. This is another key component which addresses this study's finding that these respondents didn't appreciate the depth and breadth of their practice upon which they could be reflecting on and learning from.

Response to Research Question 4

In the context of this wider reframing of educational policy what can a QCA of reflective portfolios help us to learn about the levels of pedagogical understanding and practice documented by PSTs enrolled in an ITE programme?

The reliability and validity of portfolios

The research design of this study places reflective portfolios at the heart of its data collection strategy. These artefacts of learning have been in use in Ireland's HEIs for more than twenty years. The time and effort spent compiling them by the PSTs, and the actual physical product of their efforts, are considerable. However, these reservoirs of PST reasoning and planning are not regularly accessed for the purposes of research on teacher preparation in an Irish context. This study wanted to change that. It is one of its central contentions that the learnings on PST thinking processes, misconceptions, values and beliefs and opinions on supports offered by their ITE programme are an invaluable scholarly resource.

Portfolios have been lauded when they are integrated, purposeful, comprehensive and mentored within teacher preparation programmes (Driessen, 2017; Driessen & van Tartwijk, 2018; Fox et al., 2015; Hoy et al., 2006; Korthagen, 2016). This study contends that there is evidence that this is the manner in which they are employed by the programme herein explored. However, portfolios have also been heralded as a receptacle of 'bureaucratic jargon divorced from reality' (McGarr & O'Gallchóir, 2020; Wenger, 1998), where PSTs focus on what went well and are preoccupied with more general pedagogical concerns (Hollingsworth, 1989; McGarr & McCormack, 2014), rather than focussing on core convictions and strategies (Cialdini et al., 1981). It has also been suggested that the separation of the planning and reflecting process from the enactment process can weaken the authenticity of the reflective artefact (Harford et al., 2010).

The findings of this study, as outlined in the previous chapter, suggest two things. Firstly, incongruently to previously mentioned studies (Hollingsworth, 1989; McGarr & McCormack, 2014; McGarr & O'Gallchóir, 2020), the respondents were reasonably positive about their experience with their reflective portfolios. They found that opportunities to formally reflect on experience contributed positively to their self-confidence and wellbeing. However, this study's portfolio analysis failed to reveal respondents' theoretical depth of understanding as to the potential complexity of

what they could be reflecting upon in the pedagogical domain. The Focus Group participants reported that their perceived limits to what could be reflected upon led them to occasionally engaging with the earlier mentioned weakness of reflective portfolios, submitting unsophisticated interpretations of what they think the HEI might want to see included, regardless of what actually happens in the class (McGarr & McCormack, 2014; McGarr & O'Gallchóir, 2020). It is disappointing to hear that their reported positive disposition towards reflection can be dissipated by a lack of awareness of potential reflection foci and/or structures and tools by which to initiate reflection on them.

Other respondents were just left unsure about how to translate their philosophical stance on teaching into effective lesson design. They doubted their capacity to employ an effective theoretical vocabulary to articulate constructivist pedagogical structures in their lesson planning. Secondly, agreeing with other Irish based research, they seem to be more preoccupied with more immediate routine knowledge around classroom control and subject knowledge deficiencies, than alternative complex pedagogical concerns (McGarr & McCormack, 2014). The participants of this study acknowledge the portfolio writing process with unveiling fallacies for them, such as, over dominant teacher talk, and an expectation that the strategy of oral explanation would be sufficient for learners to comprehend complex conceptual elements of their discipline. However, the pedagogical considerations evidenced in their writings are broadly of the shallow variety, preoccupied with more immediate practical content knowledge and behavioural management concerns. Even at the conclusion of their *Initial* teacher education course, they bemoan their experience where they do not yet feel capable to discuss theory in an integrated way with practice. However, one should be cautious of dismissing the portfolio as a scholarly resource when one of the factors influencing this lack of reflective depth may well be the scaffolding structures and experiences afforded the PST by the HEI. This may indeed promote a non-sequitir fallacy.

This present study suggests that PST portfolios are a significant untapped resource in potential practice-based research in Irish teacher education. They have the potential to diagnostically inform individual institutions on their structure and approach, but also

to contribute to the wider discourses on fields such as belief and value formation and disruption, general pedagogical concerns, PCK reasoning and reflective practice. They are a potential treasure trove of information that could influence teacher educators navigating means to integrate theoretical and practical knowledge meaningfully for PSTs. It is acknowledged that the reflective practice demonstrated in this study's analysed documents ranges from the committed and authentic to the instrumental, but that this is in the context where there is significant potential for further formal scaffolding of the reflection process at both school and university sites.

I argue that this study has contributed to the field of reflective practice by demonstrating the value of the data contained within the analysed portfolios to unveil the pedagogical planning and documented practice struggles of the PSTs. I would contend that the findings of this study suggest that the respondents respect the portfolio planning and reflection process. However, they require a lot more support to meaningfully amalgamate theoretical knowledge and practical/craft knowledge. It is my hope that a rising tide will lift all boats, the more opportunities the PSTs are afforded to clinically reason on their pedagogical practice, with teacher educators who can leverage common learning and teaching scenarios, the richer the planning and reflection work can become in their portfolios.

In order to support the looked for deeply complex reasoning at the boundaries of theory and practice, the type of reflective practice promoted here requires clear definition and scaffolding to support, what are, novice practitioners. There are many taxonomies of reflection, but they mainly concur that low level reflection witnesses the candidate describing the environment and their experiences within it. High level reflection witnesses the candidate considering the moral and ethical dimensions (mission) of those experiences using analysis and evaluation, (Korthagen & Vasalos, 2005; Korthagen, 2016). According to Korthagen, it is the latter type of reflection which transformative teacher education programmes, committed to facilitating clinical pedagogical reasoning, orchestrate.

Korthagen et al devised the ALACT (Action, Looking Back, Awareness, Creating Alternatives, Trial Teaching) model as a mechanism which enables developmental

conversations between those positioned at different points on the epistemic phronesis spectrum, (Korthagen et al., 2001; Korthagen & Kessels, 1999). The ALACT model has evolved into a framework which "focuses on deep value-driven and transformative learning that builds on people's personal strengths", (Korthagen, 2016, p. 326). Its purpose is to extract the personal 'gestalt' dominated thinking from the novice so that they can begin to consider and comprehend teaching and learning at a remove from their own personal experience, (Korthagen, 2017b; Korthagen, 2016; Korthagen et al., 2001; Korthagen et al., 2013; Korthagen & Kessels, 1999). Examples of this process of considering alternative perspectives and experiences divorced from their own is limited according to the analysis conducted for this study.

Aligned with the belief that it can widen the PST's perspective on learning, the ALACT system, in its second and third stages, focusses on the teacher's emotional and motivational aspects as well as their rational thinking (Korthagen, 2017b), seeking to facilitate the development of this problematising process. This integrates with the proposition that transformation at ITE will only happen if the PST acknowledges a problem with their practice and wishes for a transformation to happen, (Dolan, 2017a). This study opines that the formal adoption of a uniform reflective practice model, such as ALACT, could assist all parties engaged in the curation of PST portfolios to facilitate knowledge boundary pedagogical reasoning. This in turn would afford the portfolio even more opportunity to realise its true potential as a reflective vehicle which promotes deep clinical pedagogical reasoning.

Chapter 8: Conclusions

Introduction

This study opened with my personal reflections on a painful transition journey from a content transmission style of teaching to a style that more centrally acknowledged constructivist leanings. A lot of the pathfinding that I engaged with on that journey was unguided, incoherent and fragmentary. Between now and then, national policy has mandated that the teaching profession generally needs to initiate this practice altering journey. This policy intent kindled an interest in me to see how those in the *Initial* phase of the teacher education continuum were progressing with this challenge, and whether further illumination could contribute to help light the way?

This piece of scholarly work answers the calls of Shulman, Grossman and Sahlberg to inquire into the clinical aspects of practice in the learning to teach process; what Shulman referred to as teacher education's 'blind spot'. Rigorous analytical procedures were applied to an innovative QCA of PSTs reflective portfolios so that this study could

explore the pedagogical understanding and demonstrated enactment practices of the respondent PSTs. The commitment to and level of care for young learners was commendable in the participant PSTs. It was clear that each of the respondents was investing considerable levels of time and effort into the learning to teach process. However, this study's findings suggest that despite significant policy change on the pedagogical role of teachers, there has not been corollary evidence of pedagogical understanding, reasoning and enactment in this respondent cohort.

Findings from this delimited study suggest that stubborn pedagogical practices that have been entrenched in Irish secondary education for decades are not yet being destabilised by the introduction of the new generation of frameworks, specifications and educational policy. Textbooks, terminal assessments and teacher centric practices still dominate according to the documented experiences of the respondents to this study. Didactic strictly controlled recitation practices are evidenced, alongside over-estimations of learner capacity, a dearth of anticipation around the learning journey, and inadequate premeditated resourcing to scaffold the proposed learning for the learners.

Acknowledging that independent pedagogical reasoning if observed in this context would be emergent, this study scrutinised for nascent references or understandings but struggled to find significant evidence of them. Respondents were unable to enact the looked for deep clinical integration of pedagogical theory and practice sought by ITE influencers such as Sahlberg. Either they were not aware how to do this, were aware but chose not to do it for other reasons such as emergent confidence and subject content knowledge deficiencies, or were oblivious to its necessity. When it did occur (N = 3/90), a number of factors such as confident subject knowledge, specific contextual knowledge, and a relationship of trust constructed with the class combined as being essential factors for this type of pedagogical reasoning and enactment's emergence.

Empirical Implications

Evidence of Pedagogical Reasoning

This study's findings suggest to the field of teacher education that PST pedagogical dispositions are heavily influenced by their own apprenticeship of observation and firmly established values and beliefs about teaching and learning. N = (11/15) respondents exclusively employed learning intentions to document what content they intended to 'cover' in their class. Often these practices opposed their professed pedagogical ideology as documented in their portfolio. There is even evidence where the same respondent employed divergent pedagogical ideology and strategy in each of their two teaching subjects. This finding strongly suggests a correlation between subject knowledge confidence and the PST's ability to translate a pedagogical constructivist ideology into constructivist practice. The evidence gathered from the focus group, conducted one year after the submissions of the portfolio, suggests a more considered understanding of learning purpose and learner activity on the part of the respondents. However, the pedagogical changes which they had implemented in the interim period appeared to be more tokenistic than fundamental.

Empirically, this study's findings suggest that established pedagogical values and beliefs require opportunities for refinement throughout the ITE process if the experience of the lower secondary learner is to be significantly changed. Content transmission pedagogical strategies dominate in the documented practice analysed for this research. Textbooks and PowerPoints are the main tools used for these strategies. This is manifested for the lower secondary learner in their documented role as note taker, passive observer, and highlighter. Learners in the majority of classes are passive recipients of content. Students transcribed notes even in classes where there were 1:1 digital devices in use.

These practices suggest to those of us working in the field that silence and occupation at lower order tasks seems to be equated with control according to the documented

reflections of these PST respondents. The policy looked for pedagogical principles are only occasionally visible in documented practice with this respondent cohort. These minority exemplars, when engaged with, resulted in classroom management issues in most cases. The respondent reflections suggest that the management issues were a result of insufficient scaffolding, over-reliance on oral explanations and inexperienced classroom management structures and procedures. There were very few examples of individually devised strategies that were cognisant of their own learners and context. Respondents bemoaned that their teacher-centric teaching style impeded their ability to differentiate as advocated by theory. They found themselves relying on questioning in the moment and pairing perceived stronger students with weaker ones as their main differentiation strategies. These factors contribute to the PST reverting to conservative practice which is dominated by the teacher.

These findings mirror similar conservative pedagogical allegiances which have been consistently unveiled through research into in-career practitioners in Ireland over the last four decades. Only twenty years ago, an ESRI report into Irish 2nd level teaching and learning did not even mention pedagogy conceptually. A significant systemic effort is required to spotlight pedagogy in the learning to teach process in Ireland. This study suggests that pedagogical promotion in ITE could be aided by the artefacts supplied in the appendices at the conclusion of this research. Further research could contribute as to how best to extend this promotion through the continuum to the *Induction* and *In-career* phases.

I also believe that systemically we need an integrated procedure for pedagogical promotion in Irish education. If masterful teaching is to be lauded and promoted then it must be recognised in tenure, status and remuneration. Currently, Irish second level teachers have little opportunity for promotion unless they choose to go for leadership/management roles. Perhaps commissioning a *Centre for Pedagogical Advancement*, constituted in a similar way as the already existing *Centre for School Leadership,* could be a landmark political statement. This agency could accredit in-career teachers for pedagogical advancement, certification which could in-turn support their application for in-school pedagogical promotion. It could also integrate

certified teachers as in-school teacher educators and link persons with the HEI to formalise the relationship between sites where PSTs learn to teach.

Perceived Barriers to Pedagogical Reasoning

This research has also contributed to the field of teacher education by synthesising the barriers to pedagogical understanding and enactment which this respondent cohort reported experiencing during their learning to teach process. This is an important contribution particularly in a period where policy intends significant practice change. These barriers can be synthesised into three distinct groupings; personal barriers, school site barriers, and HEI barriers.

The personal barriers to pedagogical development which emerged from the documented experiences of this cohort of PSTs were time poverty, confidence in their perceived role transition from student to professional, and physical and mental wellbeing issues. Commuting, part-time jobs and demands from the school and university sites contributed to a collective description of time poverty for these PSTs. Concerns about their general pedagogical knowledge and subject content knowledge added to the natural stresses on their transformation from student to professional. All of these pressures led some to document physical and mental wellbeing issues. Those engaged in policy development and ITE design and enactment need to be aware that these are the day to day realities of PSTs learning to teach.

The school site barriers to pedagogical development which emerged included the dearth of in-depth clinical conversations about pedagogy between the PST and the cooperating teacher. Meetings that did occur tended to be shallow and transitory, focussing on content to be covered. The school culture was also reported to impede engagement with pedagogical reasoning. Awkward intimidating staffroom conversations, teachers continuing practice as if junior cycle had never happened, and leadership attitudes that ‘quietness equalled learning’ contributed to conservative practice and culture where textbooks and terminal assessments still dominate according to the respondents. Finally, the data highlighted classroom management

issues. Student disruptive behaviour and demand for notes limited opportunity for pedagogical experimentation according to the PST participants. A synthesis of these experiences contributes to school leadership and teacher education/teacher educator research as we strive to provide contexts that support new teachers to flourish in the process of developing their pedagogical reasoning, resourcing and skill sets.

The university site barriers to pedagogical development which emerged included a claimed incongruence between teaching practices extolled by the university versus the 'realities' of what is happening at the school site. The university approach was worryingly spoken of, by the participants of this study, as a 'rite of passage' to perform before reverting pedagogically post qualification. They also claimed that a particular impediment to pedagogical reasoning and experimentation was the lecture approach employed by many of their HEI teacher educators who engaged primarily with content transmission. Their professional practice class experiences at the HEI were described as content transmission sessions, or modelling sessions of practice seeking uncritical mimicry to be performed by them at their school sites at a later date. There was no evidence of teacher educators co-reasoning with PSTs on approximal teaching/learning dilemmas. Pedagogical processes, such as translating learning outcomes to learning intentions were reported as complex in a context where the PSTs reported that such reasoning was rarely scaffolded or modelled.

All of these contextual factors emerged manifestly and/or latently from the opinions and documented experiences of the respondent PSTs. This interpretivist study contends that the concerns of those who are called upon to authentically implement the intent of policy need to be acknowledged and mitigations explored by each of the institutions providing ITE programmes. This of course is stated with an already clearly acknowledged concern that this study only documented the PST's experience and not that of the HEI, its administrators or teacher educators.

Theoretical Implications

Portfolios as a scholar's window

As Irish teacher educators we have access to substantial volumes of curated data on PST's learning to teach experience in our own HEI institutions. This study opines that its methodological approach is a valid means by which to unveil that pedagogical experience. I suggest that similar methodological approaches could be employed in other ITE programmes in order to gain a more comprehensive insight into the learning to teach experience of our pre-service teachers. This is particularly relevant in this current period of policy reform which targets the pedagogical role of teaching practitioners.

This study has argued that reflective portfolios, when integrated across ITE modules and sites with a supportive reflective framework, can be a scholar's window on the understandings and practice of PSTs. Perhaps it could critically be suggested that integrating QCA portfolio analysis with in-person practice observations might be an even stronger methodological design for research such as this? This option was outside the scope of the current study. I have argued that the documented reflections on practice are a valid stand-alone medium for insight into PST's practice. The learning that has emerged from this analysis process is detailed, and can hopefully be a stimulant for reflection for ITE courses about how PCK, and clinical/craft knowledge generally, can be more meaningfully foregrounded in teacher preparation programmes.

Exposure of manifest PCK reasoning and enactment strategies

This study established keystone capacities that require promotion in the pedagogical preparation of those learning to teach. These were identified as anticipative conceptual understanding, scaffolding resource design capacity, establishing learning purpose for learners, orchestrating differentiation in learning and employing individual and collaborative reflective practices. The study clearly establishes that if PSTs are to be readied for the pedagogical policy intent as outlined in the current generation of

educational policy, then these are central capacities to focus on for teacher educators and teacher education institutions.

Keystones: Values and Beliefs

This study reaffirms the fundamental importance of PST's cultural scripts which have orchestrated their values and beliefs. Teacher education must crucially address, challenge and recalibrate these, if necessary, as a core objective of their programme. If this is not addressed, there is the potential for a continued future of pedagogical tinkering around the edges. This study found 66% of the PSTs to be operating with conflict core beliefs, where there is a significant mismatch between their professed pedagogical ideology and their documented practice. The proposed values and beliefs recalibration is made even more difficult when the contextual factors at play in university, school sites and the personal stresses and time constraints on those learning to teach are taken into account. Research consistently suggests that unless personal pedagogical concerns are stimulated in PSTs they are unlikely to deviate from peripheral challenges to those of their core beliefs. The contribution here is spotlighting the keystone status of these pedagogical dispositions in those selected for the learning to teach process and is calling on HEIs to do more during their recruitment phase for ITE and within the programmes themselves.

Foregrounding Clinical/Craft Reasoning

This study stresses the continued teacher education 'blind spot' at play according to the focus of this research; that is focussing on the reconfiguration process that teachers' subject knowledge undergoes to become the content of instruction. This focus on the clinical/craft knowledge (proximal dilemmas) , orchestrated by teacher educators who have the capacity to integrate theory and practice in an experiential way for those learning to teach is lauded as a critical component in those jurisdictions that claim to be the best performing ITE systems. According to this study, PSTs require more time in a safe place to build their capacity of convergence thinking between

theory and practice to anticipate, to reason and create collaboratively, supported by knowledgeable, experienced and adaptable teacher educators. This study argues that its PCK tool, which was used as an investigative framework, is an appropriate mechanism to both further examine and influence PCK development in teacher preparation programmes.

Policy Implications

Claimed centrality of pedagogical reasoning

This study synthesised over forty years of consistent calls for more pedagogical focus in the Irish teaching profession's practice. It highlights how this looked for increased focus can conceivably be interpreted as a significant influence in the design of this current generation of educational policies, and as such can be construed as a lynchpin for their authentic implementation. This has not been acknowledged heretofore in academic publications of the field. This study suggests that NCCA publications on the matter understand that they, as an agency of curricular reform, are aware of the centrality of pedagogical capacity development in the profession and see it as a fundamental component in the enactment process of currently looked for curricular changes.

Learnings for Policy Makers

This study analysed the existing pedagogical context in Ireland, and the experiences of other jurisdictions when they have tried to execute a similar pedagogical practice change with their teaching profession. It focusses attention on the dearth of Irish pre-publishing policy investment and supports. These have been suggested internationally to be vital if authentic implementation of policy which seeks to pivot practice to such an extent as this generation of Irish policy does. What also suggests itself from that desktop analysis, and from the documented and recorded experiences of this study's respondents, is that more pre-emptive consideration on the end users is required by

policy makers in relation to implementation. The individuals who are expected to navigate and interpret these publications are not implementation automatons. They have firmly established, sometimes entrenched, values and beliefs and cultural scripts. As Michael Fullan and others have commentated, if we do not take these factors into consideration what hope have we of authentic change success? This is particularly applicable in Ireland where the pedagogical status quo has long been identified as resolute.

When such dramatic systemic change is looked for by policy, the findings of this study suggest that more account should be taken of the personal concerns and circumstances of the proposed implementers. These respondents report to be anxious, stressed and time poor. How are these day-to-day realities for the practitioner at the coal face genuinely comprehended by policy makers? If these factors are not premeditated upon and pre-empted by provisions of support, is it reasonable to expect authentic implementation?

This study also spotlighted that there were significant points of divergence between at least two of the central agents involved in designing and publishing this generation of educational policy. It is advisable that congruence and coherence be looked for in advance of determining such an overhaul of looked for dispositions and practices amongst a profession, particularly when it is well known that they tend to be conservative in the face of change. A shared language and set of frameworks would also help to communicate a consistent message of looked for understandings and practices from a profession that is change fatigued and professionally balancing many other concerns.

Learnings for teacher education

In relation to ITE policy, some significant issues formerly identified are echoed in the findings of this study. The integration of the knowledge domains by multiple teacher educators, engaged in foundation and practicum modules within the HEI is needed. This could include a review of current styles of sessions facilitated at university with

the aim to increase the volume of workshop style sessions where the co-creation of context suitable resources, and methods, are central alongside considerations of theoretical underpinnings and general criticality influenced by craft knowledge.

Adaptable, knowledgeable disciplinary practitioners are vital if this style of pedagogy is to be authentically realised. Although this study advocates for an illumination on pedagogical practices, it does so with the warning that PCK in its entirety must be incorporated in the process. Disciplinary knowledge which envelops curricular subject content knowledge is a critical factor in the development of pedagogical reasoning. This centrality of content knowledge needs to be acknowledged and championed in reviews of the Teaching Council's entry requirements to the profession.

A further formal integrated university and school placement site relationship, as looked for by Sahlberg in his reports, could contribute to congruence in lines of communication and legitimacy of research and practice. This could mirror something similar as has been employed in Holland as reported by Hall et al where school based teacher educators have contracts which involve some school based responsibilities and some university based ones, (Hall et al., 2018). Their role becomes primarily to promote integration and synchronisation for the theory and practice divide across sites.

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Appendices

(Appendix A) Information and consent form for participants.

Purpose of the Study

My name is Colm Dooley. I was a Tutor, Supervisor and Methodology lecturer on a PME programme for ten years. Currently, I am a doctoral student in Maynooth University. As part of my doctoral studies I will complete a dissertation. The research seeks to learn more about the knowledge, the reflections and the understandings of PME students during the early experiences of becoming a teacher.

Why this research question?

In the last decade there have been a number of new national and international policies that offer a different understanding of the role of the teacher at secondary level in Ireland and of pedagogical practice. I am interested in exploring how this role is understood by you and how you find the experience of preparing for and teaching your subjects in school. I would like to understand your views and perspectives on this process.

What will the study involve? There are two stages to the research project and you can decide which part you would like to be involved in by ticking the boxes on the consent form.

Stage 1

The first part just involves you giving consent for me to analyse your professional portfolio to learn more about your experience of becoming teacher. I'll be taking a sample of the portfolios from different subject areas. This analysis will only occur once the assessment process for the portfolios has been completed by the college. I would like to learn more about how students' understanding and practice developed over the course of the first year.

Stage 2

The second part is an invitation to participate in a focus group with your peers. Once I have finished the analysis of the portfolios, I hope that a number of different themes will emerge that we can discuss together. Please be assured that we won't be discussing individual portfolios and none of our focus group will remain confidential and the content will not be discussed with your lecturers or your cooperating teachers or principals. It will be focused on pedagogy and the role of the teacher. This will take place in your institution at a time and place suitable for you.

Who has approved this study? This study has been reviewed and received ethical approval from Maynooth University Research Ethics committee. You may have a copy of this approval if you request it.

Why have you been asked to take part? It is important for teacher educators and policy makers to learn more about the voice and perspective of pre-service teachers. I hope that the learning from this research will be beneficial to you as a novice teacher, and also to those PME students that follow you. It will support reflection about what will be required in your future role as a teacher. There are a number of significant changes happening in education which will affect the practice of

teachers and this research aims to contribute further understanding of what those changes are.

Do you have to take part?

No, you are under no obligation whatsoever to take part in this research. However, we hope that you will agree to take part and give us some of your time with stage 1 and 2 of the research outlined above. It is entirely up to you to decide whether or not you would like to take part. If you decide to do so, you will be asked to sign a consent form and given a copy and the information sheet for your own records. If you decide to take part, you are still free to withdraw at any time without giving a reason and/or to withdraw your information up until such time as the research findings are published in 2021. A decision to withdraw at any time, or a decision not to take part, will not affect your relationships with the University or any assessments

What information will be collected? The personal data that will be collected is your name and your student number. No other sensitive data will be collected.

Will your participation in the study be kept confidential? Yes, all information that is collected about you during the course of the research will be kept confidential. No names will be identified at any time. All hard copy information will be held in a locked cabinet at the researchers' place of work, electronic information will be encrypted and held securely on MU PC or servers and will be accessed only by Colm Dooley and Professor Aislinn O'Donnell

No information will be distributed to any other unauthorised individual or third party. If you so wish, the data that you provide can also be made available to you at your own discretion.

'It must be recognised that, in some circumstances, confidentiality of research data and records may be overridden by courts in the event of litigation or in the course of investigation by lawful authority. In such circumstances the University will take all reasonable steps within law to ensure that confidentiality is maintained to the greatest possible extent.'

What will happen to the information which you give? All the information you provide will be kept at Maynooth University in such a way that it will not be possible to identify you. On completion of the research, the data will be retained on the MU server. After ten years, all data will be destroyed (by the PI). Manual data will be shredded confidentially and electronic data will be reformatted or overwritten by the PI in Maynooth University.

What will happen to the results? [*For example:*] The research will be written up and presented as a thesis with the potential for an abbreviated version to be presented at relevant conferences or published in relevant journals. A copy of the research findings will be made available to you upon request.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for you in taking part or It is possible that talking about your experience may cause some distress.

What if there is a problem? At the end of the focus group, I will discuss with you how you found the experience and how you are feeling. If you experience any distress following the focus group, you may contact my supervisor - Professor Aislinn O'Donnell (Aislinn.odonnell@mu.ie) if you feel the research has not been carried out as described above.

Any further queries? If you need any further information, you can contact me – Colm Dooley @ 0868642052

If you agree to take part in the study, please complete and sign the consent form overleaf.

Thank you for taking the time to read this

(Appendix B) Consent Form

I……agree to participate in Colm Dooley's research study titled "Pedagogical Content Knowledge and Pedagogical Competence; An analysis of knowledge, perceptions and practice of pre-service post-primary teachers in Ireland".

Please tick each statement below:

The purpose and nature of the study has been explained to me verbally & in writing. I've been able to ask questions, which were answered satisfactorily. ☐

I am participating voluntarily. ☐

I give permission for my focus group with Colm Dooley to be audio recorded ☐

I understand that I can withdraw from the study, without repercussions, at any time, whether that is before it starts or while I am participating. ☐

I understand that I can withdraw permission to use the data right up to the submission of the thesis in May 2021 . ☐

It has been explained to me how my data will be managed and that I may access it on request. ☐

I understand the limits of confidentiality as described in the information sheet ☐

I understand that my data, in an anonymous format, may be used in further research projects and any subsequent publications if I give permission below: ☐

I agree to quotation/publication of extracts from my interview ☐
I do not agree to quotation/publication of extracts from my interview ☐

I agree for my data to be used for further research projects ☐
I do not agree for my data to be used for further research projects ☐

Signed…… Date……

Participant Name in block capitals ……..

I the undersigned have taken the time to fully explain to the above participant the nature and purpose of this study in a manner that they could understand. I have explained the risks involved as well as the possible benefits. I have invited them to ask questions on any aspect of the study that concerned them.

Signed…… Date……

Researcher Name in block capitals ……..

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the Maynooth University Ethics Committee at research.ethics@mu.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner.

For your information the Data Controller for this research project is Maynooth University, Maynooth, Co. Kildare. Maynooth University Data Protection officer is Ann McKeon in Humanity house, room 17, who can be contacted at ann.mckeon@mu.ie. Maynooth University Data Privacy policies can be found at https://www.maynoothuniversity.ie/data-protection.

Appendix C Focus Group

Introductory remarks:

Welcome and thank you very much to you all for coming. My name is Colm Dooley and I am a Doctoral Researcher with Maynooth University. I have invited you here today because I'd like to hear your perspectives and ideas. I know you are really busy, so I appreciate you giving me your time.

I really hope that our conversations will also be useful to you in developing your own professional reflections and practice. I would just like to remind you that this conversation is specifically focussed on pedagogy. I have been using a working definition that pedagogy ***is the strategies used by a teacher to best facilitate the sought outcomes of learning, based on that teacher's knowledge of their subject area, the learners, the curriculum, and the local context.***

Our focus today is on what is called pedagogical content knowledge – Shulman described PCK as the art of understanding the subject matter (Knowledge Skills and understanding) and predicting how young learners might grapple with it from their perspective.
There are no right or wrong answers today. What is important is learning more about how each of you think about how you teach your subjects and sharing this together.

As I mentioned in the consent forms, I am recording our conversation. I am only doing this to ensure that I hear all of your ideas and perspectives. As I explained to you in September, pseudonyms will be used to protect your identity in this research process.

This is very much an informal discussion so feel free to speak without having to direct what you say towards me. Speak with each other, following up on what each other have said.

Questions:

1. Describe your experience of documenting your lesson planning and reflections in a portfolio?
   Prompt: Did the process influence your development as a teacher in any way?

2. Can you talk me through some of the things that helped you feel more confident going into a classroom and teaching?
   Prompts: Can you remember examples of specific classes that did not work out how you wanted. On reflection now what arrangements and structures contributed to that outcome?

3. Describe your teaching style during PME 1. What do you believe influenced you and your style of teaching during the year?

   Prompts: To what extent do you feel you were able to teach in your preferred style during your placement? What factors supported/obstructed you in teaching that way? How effective was the style? **(Dialogic, Constructivist, Transmission etc)**

4. What was your experience of developing learning intentions from learning outcomes? Can you talk me through your approaches.
   Prompts: In what ways did you translate outcomes into knowledge, skills and understandings?

5. Tell me about what you learned about pedagogy in your college classes? How influential was this pedagogical learning in your practice?
   Prompt: Workshops, lesson study, video analysis

6. Outline the in-school support you received at your year 1 placement. Specifically, what kind of pedagogical support did you receive? What were you looking for?
   Prompt: Involvement of mentor/cooperating teacher, exposure to in-school professional learning, senior leadership attitude?

7. Have you ever connected with pedagogical theory in college which you wanted to try it out in one of your subjects in school the next day?
   Prompts: How was your experience of translating the theory into practice?

8. In all subject disciplines there is concrete knowledge and abstract knowledge. Concrete knowledge can be, for example, skills/techniques/methods. Abstract knowledge can be reasoning and synthesising using only mental models. Talk to me about your experience of planning for teaching concrete knowledge vs planning for teaching abstract knowledge

   Prompts: Geography: Geological time/Plate Tectonics vs how to draw a sketch map
   History: Chronology/ Progression/Bias versus constructing a significant relevant statement.
   Music: 3 chord song on a ukulele vs musical mood
   Maths: Theorem proofs vs calculating tax
   Science: How to use a microscope vs Theory of relativity
   Business: Keynesian economics vs Profit and loss account
   English: Language aesthetics vs Grammar rules

Appendix D Samples of Data Analysis Process

Pedagogical Competence Sample Unit	Lesson 1 Boreal Climate	Lesson 2 Cold Climate	Lesson 3 Mass Movement	Lesson 4 Population	Lesson 5 Migration	Lesson 6 Discrimination
General Pedagogical stance	Discusser, transmitter, orchestrator	Discusser, Transmitter, lecturer, orchestrator	Orchestrator, constructivist, transmitter	Orchestrater, transmitter	Orchestrator, transmitter, facilitator	Orchestrator, transmitter
Subject discipline conceptual understanding. Traditional beliefs and misconceptions	Expectation that students have general broad knowledge. Assumption that students have spatial awareness and can use maps	Like lesson 1 this focussed on the transmission of knowledge. Same intentions are used as per lesson 1.	Learning outcome is high order but the learning intentions are the lower level of it. Definition of mass movement is defined for sharing with the learner before the class. Structure of activity makes assumption about jump from weight of soil to speed of soil under gradient "Some students found mass movement hard to grasp"	Learning outcome is high order but the learning intentions are the lower level of it. There is only one and it focusses on the learners being able to reproduce the stages of the population cycle. No key terms listed	Learning intentions are again exclusively content focussed Success criteria are the defined content that the learner should be able to reproduce	Prejudice was defined
Evidence of creation of supportive learning rubrics, templates and scaffolding material	Whiteboard, Slideshow, Atlas, textbook, worksheet. One keyword highlighted with academic definition copied and pasted No worksheet for the video Provision of imagery for assisting the learner in engaging with the learning	Textbook, atlas, whiteboard, PowerPoint, video clip. Two key terms considered and defined in advance. Homework quiz will be given at the start of the next class by writing questions on to the whiteboard.	PowerPoint, worksheet, learning board, soil, smarties Two key terms considered and defined in advance. Prepared smarties in advance to represent soil moving down a slope. A4 page held by student represented slope Visuals used throughout to scaffold learner thinking	Maps, graphs, worksheet, PowerPoint, images Group work and worksheet focussed on the stages of the population cycle. Groups feedback to whole class on their assigned stage Students had to reiterate what previous groups had fed back to the class	Teacher employs a world news section at the start of most classes. PowerPoint, Active learning boards, textbook Groups of four employed Images were used on the PowerPoint to prompt learners to the desired causes of migration	PowerPoint, Learning Board, Poetry, worksheet Worksheet relates to the poem
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning	Real world news item looking to connect the subject to reality. Video used on people living in these climatic conditions. Two stars one wish used	"The temperature in the boreal region should be described as..." Students should state that the annual precipitation level is 400mm" Students will take notes from the PowerPoint	"Students will be given the key terms to learn" Students asked to consider real life examples of the effects of mass movement on human habitation	Teacher supplied questions not answers. Students searched for the answers to the questions Students had to interpret the graph according to the shared rubric worksheet	Teacher sourced material on the existing migrant crisis to create real-world meaning for the learners. Teacher claims effective questioning and sharing learning intentions and success criteria will achieve this Teacher incorporated learner's personal experience of migration into lesson	Students encouraged to share personal experience of discrimination in their own lives The poem The Sneetches by Dr Zeus was employed
Consistent reflection and reasoning on and in practice. Consideration of learner's prior learning, capacity, context and competence	Think pair share was used for atlas identification work Effective differentiated questioning No worksheet created or provided for the video The issue with two stars and a wish with learning like this is that the learning is very knowledge focussed. It is not employed to delve into conceptual awareness or the development of skills, techniques or thinking strategies	Deliberate attempt to spread questions across all learners Students grouped in tables of four to assist with mixed ability "as students who struggle tend to zone out"	There has been a consideration of the importance of prior learning on soil structure and how that might be a factor in mass movement Two stars and a wish employed at the end of the lesson Students were asked to "rate" the activities they completed in class. This seems to be more a question of did you enjoy yourselves? Admits to needing to differentiating the volume of content to help those who struggle	Recall questions at the start of the class suggested that prior knowledge was not appropriately consolidated by learners. Teacher proceeded with class as planned but queried that decision in her reflection	Groups are now being orchestrated to include a range of learning capacities Highlights the importance of challenging classroom activities	Think pair share orchestrated to match weaker and stronger students. Recap oral questioning on prior learning Reflection was two lines long
Extra Comments leading to potential new or expanded meaning units	Learning outcomes to learning intentions quite focussed on knowledge only. 30 minutes of the lesson are dominated by teacher talk. Little awareness of inductive/deductive practices with the learners. They engage with a task but it does not lead to a rule or rubric	The level of student task is low here. There is no extension beyond the locating of a country which straddles a particular parallel. Students seem to be requested to parrot in a vacuum	There seems an issue here where the teacher assumes that the student has the same life experience and macro understanding that they do. They forget that they have constructed this experience and understanding over a long period of time and that they have spent some of that time exclusively studying their own subject area.	Students are active in the task but the task probably lacks authentic meaning. The class ends with the delivery of a PowerPoint with the right answers. Students then update their versions	Are groups of four employed to expedite the journey to the desired answer for the teacher?	

Pedagogical Competence Sample Unit	Lesson 1 Early Christian Ireland	Lesson 2 Medieval Period	Lesson 3 Ancient Rome	Lesson 4 Renaissance	Lesson 5 Mass Movement	Lesson 6 Rivers
General Pedagogical stance	Transmitter, lecturer, manager	Transmitter, lecturer, manager	Transmitter, lecturer, orchestrator	Transmitter, lecturer, orchestrator	Transmitter, lecturer, orchestrator	Transmitter, lecturer, orchestrator
Subject discipline conceptual understanding. Traditional beliefs and misconceptions	Single learning outcome translated into two lower order learning intentions. Evidence suggests textbook knowledge was transmitted as fact.	Pair of learning outcomes	Purpose of the class is to remove misconceptions. This is done by oral questioning with mini whiteboards. This would suggest that the responses are to closed questions.	One learning outcome with learning intentions moderately connected to it	One learning outcome with learning intentions moderately connected to it	Students are clearly required to be able to identify features as per the learning intentions of the lesson
Evidence of creation of supportive learning rubrics, templates and scaffolding material	Resource book worksheet, PowerPoint, Notes Copies, Textbook, Youtube Key words and new language flagged in advance	Mini whiteboards, PowerPoint, Notes Copies, Textbook, Youtube Located site relevant to learning close to the location of the school Key words were identified and defined in advance of the lesson Recall exercise on Feudal system Images sourced for PowerPoint	Resource book worksheet, PowerPoint, Notes Copies, Textbook, Youtube Students watched the movie gladiator. Not evident whether this was in class or not?	Resource book worksheet, PowerPoint, Notes Copies, Textbook, Youtube Key words and new language flagged in advance	Resource book worksheet, PowerPoint, Notes Copies, Textbook, Youtube Key words were identified and defined in advance of the lesson Cloze test from workbook was used	Resource book worksheet, PowerPoint, Notes Copies, Textbook, Youtube Key words and new language was flagged in advance Recap exercise carried out at the beginning of the class
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning	"Answering questions and taking notes from PowerPoint into their copies" Some students told stories of visits to monasteries. "Students listen and take down notes into hard back copies" (Total 35mins)	Students will draw out feudal system on whiteboards Students will complete questions in workbook Students will take notes from PowerPoint	Students drew a spider gram of their knowledge on Rome. The bingo game concentrated on the key words and definitions in advance of the students' Christmas Test	Students will take notes from PowerPoint. Students will answer questions Complete workbook worksheet "Teacher will ask questions related to the information being learned throughout the class"	Students will take notes from PowerPoint. Students will answer questions Complete workbook worksheet Videos were sourced and shown to the students to gain their interest	Students will take notes Students will analyse images Students will draw labelled diagram twice. One was completed without the use of the textbook This diagram is the on that occurs in the textbook.
Consistent reflection and reasoning on and in practice. Consideration of learner's prior learning, capacity, context and competence	Separate worksheet for ASD student Reduced worksheet for struggling students. "behaviour was a lot better today...this may be due to the student being half asleep as it was first class of the day" "I need to remember I should not be the only one talking for an hour long class"	Separate worksheet for ASD student. "I think the students worked well as they were kept busy throughout the class". The Cloze passage from the skills book got the students thinking. Feels that she is preparing too much material for the class. Learning intentions may betray a misunderstanding between the students being told about something and the students demonstrating knowledge or understanding about something.	Separate worksheet for ASD student. Extra notes have been prepared for fast finishers	Potential unknown prior knowledge from primary school or Art or English Separate worksheet for ASD student. Crossword prepared for fast finishers Notes, explanation, task on notes next task	Moved poorly behaving student to position beside academic student which changed hi s behaviour. Highlights a quote from Biesta (2012) about "the importance of the role of a teacher has by engaging in direct instruction at a moment where the majority of the literature is saying that teachers are facilitators of learning"	Worksheet had a slight differentiation for three students Six students arrived late into class. "I provided these students with a hard copy of the notes that they had missed as there was a good amount of notes taken down throughout the lesson"
Extra Comments leading to potential new or expanded meaning units	Observation and oral questioning	Observation and oral questioning Quite traditional presentation of content with follow up questions on the retention of that content.	Observation and oral questioning	Observation and oral questioning	Observation, oral questioning, worksheet	Observation, oral questioning, worksheet

Pedagogical Competence Sample Unit	Lesson 1 Sets	Lesson 2 Our Atmosphere	Lesson 3 Sets	Lesson 4 Weather and Climate	Lesson 5	Lesson 6
General Pedagogical stance	Co-Creator, orchestrator, constructivist, discusser	Orchestrator, discusser, transmitter	Orchestrator, discusser, transmitter, modeller, observer	Orchestrator, discusser, transmitter, co-creator	Orchestrator, discusser, transmitter/lecturer, co-creator	Orchestrator, discusser, guide, facilitator
Subject discipline conceptual understanding. Traditional beliefs and misconceptions	Reinforced abstract concepts introduced with real life examples. Considered how this lesson foreshadows later lessons.	Identification of key words and language in advance of the lesson	Reinforcing abstract concepts introduced with real life examples Aims to correct misconceptions on cardinality through discussion and observation of worked examples	Introduced a challenging concept with the purpose of "stunning" the students to lead to wonder and inquiry	No real evidence in this particular plan	Students exposed to concept of multiple ways to achieve success. Mathematical nous might be useful in everyday life especially when confronted with physical challenges
Evidence of creation of supportive learning rubrics, templates and scaffolding material	Whiteboard and textbook. Definitions of mathematical concepts. Revision task at start of class Has created "dumbed down" versions of mathematical definitions Students add these to a copy	Whiteboard, PowerPoint, YouTube, Textbook Diagrams, satellite imagery, YouTube video	Whiteboard, Textbook, teacher voice.	Whiteboard, Textbook, teacher voice. YouTube Students were permitted to create their own definition of climate	Mini revision test employed at the start of the lesson Peer assessment employed on revision test	YouTube video DaraO'Brian Groups of four formed to tackle the challenging question
Creating purpose and meaning for learner. Motivating them to be autonomous in their own learning	Reinforced abstract concepts introduced with real life examples The real life examples mentioned were not explained within the plan	There is no evidence of this in this lesson plan	"They will take notes from the board and attempt questions I pose them" Teacher linked responses to oral questions to key ideas during questioning and answering session	They listen, react, watch and take down in this lesson	Reading, note-taking, completing test, drawing participate in discussion. "This lesson was student was student dominated and almost like they were taking the role of the teacher and teaching me" "Students will take turns in reading out loud the material and definitions from the textbook	"I expect students to make mental notes on the learning intentions". The specific challenge is not explained in the plan but the structure suggests that it is a task that can be mathematically solved but is labour intensive to be solved mechanically.
Consistent reflection and reasoning on and in practice. **Consideration of learner's prior learning, capacity, context and competence**	Think pair share used with differentiated pairs "I want to develop mathematical practitioners not those who can solve specific examples based on the textbook. This requires planning not just on the content I teach, but the way I teach it.	"What is taught is not always what is learned" Need to teach the students the language of the subject. Students were required to recall the name and function of geographical apparatus	I will recall to the previous lesson where we began talking about Venn diagrams. I will recall back on all the set notation we have seen thus far. Think pair share used with differentiated pairs This is the third lesson in a row where the reflection was quite short in comparison to other respondents Material/task too easy students needed more challenge	In this lesson you can see a copied section in the reflection about sharing keywords of the subject in advance of learning. If the reflection process was engaged with this should not have been repeated Learning intentions not as designed. They are now recognise and list.	I would leave note taking for homework....I find that a geographical discussion is more beneficial to the students than copying from a textbook" Students will guess which country the photos of desertification come from?	There were no learning outcomes, success criteria or reflection on learning sections included in this particular plan
Extra Comments leading to potential new or expanded meaning units	Questioning and assessment	Learning will happen through questioning posed by slideshow.	Assessment will happen through presentation of homework, observation of example attempts and verbal questioning	This process has been quite deflating. On reading the credo of this respondent I was enthused really hoping that there would be green shoots of wonderful practice. It seems now that the ideology in the credo is disconnected from the observable planning and reflection.	The process of S.O.L to Outcome to intention could be a section. In this case the intentions have retracted to recall requirements and the success criteria are a list of desired content	There is the potential here that there was a moment where this practitioner realised that stimulating wonder and engaging learners from where they are at might yield more effective learning. However the rationale or outcome was not explained in the document

A Full data folder detailing the entire data analysis process is available for scrutiny also.

Response to Research Question 5

What artefact(s) could enable initial teacher educators to support the ongoing development of pedagogical understanding and practice within ITE?

The artefacts which have been developed alongside this study's investigations into the current status of pedagogical reasoning and understanding, as documented and demonstrated by a respondent cohort of PSTs, are laid out in the appendices section at the end of this thesis. There are three specific artefacts which deal with:

1. The translation, prioritisation, and reconfiguration process of subject knowledge into the purpose and/or content for/of instruction. This is framed around the translation of learning outcomes to learning intentions conversion process that is looked for, from teachers, by this generation of educational policies.
2. A documented pedagogical journey from predominant content transmission to predominant learner centric constructivist practices which highlights how learner and teachers
3. A proposed framework for augmenting existing HEI lesson plan and reflection structures to further foreground pedagogical understanding and reasoning for those learning to teach.

Appendix: E Artefact 1

Artefact 1: The Journey from content transmission role to Orchestrator of Learning.

This artefact was compiled to trace the pedagogical development journey that I experienced in my own practice from examination coach to a facilitator of learning. The stages are not rigid, and most practitioners will straddle many of them at the same time. I do not claim that my own practice reached an exclusivity of stage 5. Each stage is presented in a readable format on the ensuing pages in order to assist the reader to engage at an appropriate font size.

Examination Coach → → → → → → Facilitator of Learning

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Role of teacher	Takes a clearly defined examination and focusses on preparing the learner to achieve at that examination using a textbook as the main resource. Teacher talk dominates the classroom There is little supplementary support material provided. Worksheets tend to photocopied out of other available textbooks or workbooks. Very little consideration for the lack of life and academic experience of young learners in the subject area. Questioning is mainly used to check retention of knowledge.	Strong focus on the content of the exam. Personally created notes are used more frequently. Prepares notes and PowerPoint presentations which are reworded versions of the textbook with additional personal experience or more effective examples. This note creating strategy acknowledges the lack of life and academic experience and understanding that young learners have. This is normally influenced by previous experiences with sections of the course where former learners have struggled. Areas of course skipped or skimmed. Shortcuts and techniques practiced with learners. Visuals, such as YouTube clips, employed to assist learners with challenging sections. Modelled answers personally made or saved from past pupils regularly shared with existing students.	The terminal examination has less impact on the day to day work in the classroom as what is sought in the exam becomes intertwined to form disciplinary concepts, themes, techniques and dispositions. More focus is directed towards the learning of the subject by others (students) and less about conveying personal knowledge or passion for the subject area, even though these are still very apparent. There is still a reliance on notes and reproduction of rote learned material but they are there as supporting resources rather than driving the everyday classroom activities. Examination years return to drilling of examination practices but students do so with a greater understanding of the subject area and why they are doing what they are doing. Resources such as Chief Examiner Reports and marking schemes direct learners to targeted revision practices.	Huge amount of personal work directed towards sourcing visual and scaffolding material which genuinely supports learners towards identified outcomes. This could include specialised images, diagrams, animations and videos. If these do not exist they are created. Analogies and exemplars are well considered and are changed as students' cultural interests evolve. Cloze test, rubric style, worksheets are created and shared to model and support learning intentions for students. The main role of the teacher is considering the major learning moments required for the learners in order to stimulate progress. Classroom experiences are modified to provide for that. Fosters wonder in the subject area through creating stimulating questions and scenarios. Transmitting knowledge orally or via excessive board work is avoided because of the known limits of the students' working memory. Regular revision of key learning steps, stages and moments occur and are integrated into later stages of leaning with the aim of committing it to the learner's long-term memory.	Considers potential outcome destination for learners for the duration of a learning cycle, collaboratively with colleagues, as described in their subject specification. Diagnostically establishes the learner's capacity annually, combining the results with experience of previous cohorts to create a tailored learning plan influenced by where the learners are actually at. Identifies the key learning moments in knowledge acquisition, conceptual understanding, disposition, skill and technical development required for the learners to progress towards the stated goals. Highlights potential misconceptions and wrong turns in key learning moments. Collaboratively creates deploys and refines learning strategies which can provide authentic and effective learning experiences for the learners. Regularly reads and researches about ongoing development in subject area and effective pedagogies related to it.
Learner Experience	Recall/rote learning is the main learning strategy. Learners are mainly passive listening, complying, repeating, writing down notes and learning off material to be reproduced in the short-term for summative assessment. Copying diagrams from the board or textbook into copies. Classes follow similar structures every day.	More experience of course content modification for personalised language and understanding. Regular practice of examination required techniques with feedback received on accuracy of content selection and technique employed. On occasion students get to dominate with some group work tasks. Classes have some variety at times. A lot of time spent transcribing notes, highlighting and copying timelines and diagrams from board or textbook into copies.	Learners' interests are influential on how the learning happens in the classroom. It is important for the learner to understand the structure of the subject discipline. Learners get to contribute to classroom presentations in a meaningful way. Their understandings are presented in real time rather than pre-defined definitions and explanations. Success criteria are still dominated by "correct" definitions and processes.	Clear purpose of what is being learned and how it is going to have a growth effect on the learner's knowledge, understanding and skill. It is carefully considered about how learning is recorded and that a documented record for learner's personal revision is created and retained. There is a rotated student secretary who documents the learning in the class in real time and then shares it with all learners. Learners spend time on thinking, discussing, trialling, failing and persevering rather than exclusively listening and transcribing	Clear purpose of what is being learned and how it is going to have a growth effect on the learner's knowledge, understanding and skill. It is carefully considered about how the learner records their learning and that documented record for personal revision purposes is retained. The knowledge, understanding, thinking, disposition and skills is presented in a co-curricular integrated manner. Teachers collaborate within the school community so they know where there are collaborative opportunities between subject areas
Purpose Methods	Learning intentions are task focussed with the learner unaware of the connection between what they are learning and the subject discipline as a whole, and/or the wider world.	Learning intentions occasionally reach higher order but are still exclusively cognitive and seeking set knowledge acquisition and repetition. There is not a consistent focus on the application of the knowledge within the subject or for the wider world	Learning intentions attempt to connect learner's interests to make the cognitive learning more accessible. There are some examples of non-cognitive learning intentions which focus on skills and attitudes	Statements of learning, learning outcomes and learning intentions are considered and reasoned with before integrating with the annually changing context of the group of learners concerned. Learners are clear how they are progressing and what destination they are trying to progress to.	Statements of learning, learning outcomes and learning intentions are collaboratively considered and reasoned with before integrating with the annual context of the groups of learners concerned. Discussions take place where past experiences are reflected on and potential learning designs, methods and solutions are debated. Learners are clear how they are progressing and where they are trying to progress to.
Assessment strategies	Assessment strategies are dominated by Classroom tests, Closed questioning, past examination questions and papers. Feedback is limited to the accuracy of the reproduction of content. Homework is prescribed as a regurgitation exercise with material from the book considered correct.	Alternative classroom tests which still seek knowledge are used. These include personally created unseen past examination questions. Textbooks are seen to be fallible and where there are mistakes the students are made aware of them. The students are aware that there are lots of textbooks written for the same course and they can't all be "perfectly right" Mixture of teacher supplied material and textbook considered "right"	Assessment moves beyond "right" answers. There is a real mix of styles of assessment where all learners have a chance to succeed. These include practical, orals, presentations open and closed book variations, reflection exercises and cloze tests. Opportunities are sought for learners to show their progress in more ways than the acquisition of content. Assessment solutions and sample responses are shared with learners. Learners take more control in self and peer assessment	Diagnostic assessment is used formally and informally by the teacher at key moments to understand where the learners are at in relation to new areas of learning which are about to be introduced. Formative and summative assessments are designed at the planning stage and are clearly integrated with the learning experiences. Assessment is not seen as a scary prospect for the learners but rather an opportunity for both learner and teacher to better understand what progress has been made and what mis conceptions and misunderstandings remain.	Assessment is designed collaboratively with department members and is deliberately intertwined with the key learning moments. Discussions take place departmentally about the best assessment fit for the particular suite of learning outcomes and intentions. Feedback to the learners is influenced by a clear understanding of the sought learning destination. Success criteria are used strategically so that learners are aware of where they are on the progress spectrum.
Relationships	Relationships can be positive but can involve an authoritative approach. This can be particularly apparent for those learners that are struggling or require something different than the uniform methods utilised.	Relationships can be positive. Those that excel at traditional forms of learning and diligently do their work could be perceived as having more positive relationships. Learners that do not conform are tolerated	Learners mostly believe in the efforts of the teacher to make learning interesting and accessible. Class and home work are designed to be engaging and learners are more willing to commit to it. There is more thought on differentiation so all learners feel that they are, to some extent, considered	Interesting and accessible learning experiences make learning enjoyable. The teacher creates and constructs scenarios and tasks that permit failure as a learning experience. Learners are comfortable with misconceptions and welcome the opportunity to learn from them.	All learners are accepted in the manner that they present. Learning is orchestrated considering universal design for learning. All learners feel as if they are valued and facilitated. There are multiple stations within the classroom each progressing at either different tasks, pace or outcomes.
Differentiation	Work is aimed at the middle ground. It is rare that there is differentiated material other than higher/ordinary level exam papers	Work is aimed at the middle ground. Extra work is prescribed to those who finish tasks quickly. Oral assistance is given to struggling students mainly through circulation during classroom activities.	Notes and material are differentiated for students with specific educational needs. Methods are used to differentiate questioning in class.	Choices are given to learners about what they produce as the outcome of homework to assist those with learning difficulties.	Breadth and depth of the course modified for those who require it. The learning destination and outcomes have been collaboratively discussed departmentally using Must, Should and Could. This translates into modified, core and extended tasks for learners Key learning moments are differentiated by group, task, method, pace, support and product
Teacher Frustrations	Practice is repetitive. Student engagement and motivation is low. Student autonomy and confidence is low. Classroom management issues require constant concern	Confidence with subject discipline has improved but lessons still result in disengagement. Students remember material for small periods of time before forgetting it again	It is a challenge to maintain a cultural and social connection with the students in front of you. Some students still cannot achieve despite a huge time investment on the part of the teacher.	The amount of time required is a challenge but after the initial investment plans and resources can be reused with small alterations. Enjoyable classes and improved retention of learning beyond short-term recall provides an opportunity for deeper learning	The amount of time required initially is considerable and stretches the work/life balance. The need to negotiate with colleagues on strategies and purpose can be challenging initially when used to doing things on your own

←Passionate Subject Discipline Expert →

Stage 1	Stage 1
Role of teacher	Takes a clearly defined examination and focusses on preparing the learner to achieve at that examination using a textbook and past papers as the main resources. Teacher talk dominates the classroom There is little supplementary learning support material provided. Worksheets tend to be photocopied out of other available textbooks or workbooks. Very little consideration for the lack of life and academic experience of young learners in the subject area. Questioning is mainly used to check retention of knowledge.
Learner Experience	Recall/rote learning is the main learning strategy. Learners are mainly passive listening, complying, repeating, writing down notes and learning off material to be reproduced in the short-term for summative assessment. Copying diagrams from the board or textbook into copies. Classes follow similar structures every day.
Purpose Methods	Learning intentions are task focussed with the learner unaware of the connection between what they are learning and the subject discipline as a whole, and/or the wider world.
Assessment strategies	Assessment strategies are dominated by Classroom tests, Closed questioning, past examination questions and papers. Feedback is limited to the accuracy of the recitative reproduction of content. Homework is prescribed as a regurgitation exercise with material from the book considered correct.
Relationships	Relationships can be positive but can involve an authoritative approach. This can be particularly apparent for those learners that are struggling or require something different than the uniform methods utilised.
Differentiation	Work is aimed at a perceived middle ground. It is rare that there is differentiated material other than higher/ordinary level exam papers
Teacher Frustrations	Practice is repetitive. Student engagement and motivation is low. Student autonomy and confidence is low. Classroom management issues require constant concern

Stage 2	Stage 2
Role of teacher	Strong focus on the content of the exam. Personally, created notes are used more frequently. Prepares notes and PowerPoint presentations which are reworded versions of the textbook with additional personal experience or more effective examples. This note creating strategy acknowledges the lack of life and academic experience and understanding that young learners have. This is normally influenced by previous experiences with sections of the course where former learners have struggled. Areas of course skipped or skimmed. Shortcuts and techniques practiced with learners. Visuals, such as YouTube clips, employed to assist learners with challenging sections. Modelled answers personally made or saved from past pupils regularly shared with existing students.
Learner Experience	More experience of course content modification for personalised language and understanding. Regular practice of examination required techniques with feedback received on accuracy of content selection and technique employed. On occasion students get to dominate with some group work tasks. Classes have some variety at times. A lot of time spent transcribing notes, highlighting, and copying timelines and diagrams from board or textbook into copies.
Purpose Methods	Learning intentions occasionally reach higher order but are still exclusively cognitive and seeking set knowledge acquisition and repetition. There is not a consistent focus on the application of the knowledge within the subject or for the wider world
Assessment strategies	Alternative classroom tests which still seek knowledge are used. These include personally created unseen past examination questions. Textbooks are seen to be fallible and where there are mistakes the students are made aware of them. The students are aware that there are lots of textbooks written for the same course and they can't all be "perfectly right" Mixture of teacher supplied material and textbook considered "right"
Relationships	Relationships can be positive. Those that excel at traditional forms of learning and diligently do their work could be perceived as having more positive relationships. Learners that do not conform are tolerated
Differentiation	Work is aimed at the middle ground. Extra work is prescribed to those who finish tasks quickly. Oral assistance is given to struggling students mainly through circulation during classroom activities.
Teacher Frustrations	Confidence with subject discipline has improved but lessons still result in disengagement. Students remember material for small periods of time before forgetting it again

Stage 3	Stage 3
Role of teacher	The terminal examination has less impact on the day-to-day work in the classroom as what is sought in the exam becomes intertwined to form disciplinary concepts, themes, techniques, and dispositions. More focus is directed towards the learning of the subject by others (students) and less about conveying personal knowledge or passion for the subject area, even though these are still very apparent. There is still a reliance on notes and reproduction of rote learned material, but they are there as supporting resources rather than driving the everyday classroom activities. Examination years return to drilling of examination practices, but students do so with a greater understanding of the subject area and why they are doing what they are doing. Resources such as Chief Examiner Reports and marking schemes direct learners to targeted revision practices.
Learner Experience	Learners' interests are influential on how the learning happens in the classroom. It is important for the learner to understand the structure of the subject discipline. Learners get to contribute to classroom presentations in a meaningful way. Their understandings are presented in real time rather than pre-defined definitions and explanations. Success criteria are still dominated by "correct" definitions and processes.
Purpose Methods	Learning intentions attempt to connect learner's interests to make the cognitive learning more accessible. There are some examples of non-cognitive learning intentions which focus on skills and attitudes
Assessment strategies	Assessment moves beyond "right" answers. There is a real mix of styles of assessment where all learners have a chance to succeed. These include practical, orals, presentations, open and closed book variations, reflection exercises and cloze tests. Opportunities are sought for learners to show their progress in more ways than the acquisition of content. Assessment solutions and sample responses are shared with learners. Learners take more control in self and peer assessment
Relationships	Learners mostly believe in the efforts of the teacher to make learning interesting and accessible. Class and homework are designed to be engaging and learners can be more willing to commit to it. There is more thought on differentiation, so learners can feel that they are considered in the process
Differentiation	Notes and material are differentiated for students with specific educational needs. Methods are used to differentiate questioning in class.
Teacher Frustrations	It is a challenge to maintain a cultural and social connection with the students in front of you. Some students still cannot achieve despite a huge time investment on the part of the teacher.

Stage 4	Stage 4
Role of teacher	Huge amount of personal work directed towards sourcing visual and scaffolding material which genuinely supports learners towards identified outcomes. This could include specialised images, diagrams, animations, and videos. If these do not exist, they are created. Analogies and exemplars are well considered and are changed over time as students' cultural interests evolve. Cloze test, starter style, worksheets are created and shared to model and support learning intentions for students. The main role of the teacher is considering the major learning moments required for the learners to stimulate progress. Classroom experiences are modified to provide for that. Fosters wonder in the subject area through creating stimulating questions and scenarios. Transmitting knowledge orally or via excessive board work is avoided because of the known limits of the students' working memory. Regular revision of key learning steps, stages and moments occur and are integrated into later stages of leaning with the aim of committing it to the learner's long-term memory.
Learner Experience	Clear purpose of what is being learned and how it is going to have a growth effect on the learner's knowledge, understanding and skill. It is carefully considered about how learning is recorded and that a documented record for learner's personal revision is created and retained. There is a rotated student secretary who documents the learning in the class in real time and then shares it with all learners. Learners spend time on thinking, discussing, trialling, failing, and persevering rather than exclusively listening and transcribing
Purpose Methods	Statements of learning, learning outcomes and learning intentions are considered and reasoned with before integrating with the annually changing context of the group of learners concerned. Learners are clear how they are progressing and what destination they are trying to progress to.
Assessment strategies	Diagnostic assessment is used formally and informally by the teacher at key moments to understand where the learners are at in relation to new areas of learning which are about to be introduced. Formative and summative assessments are designed at the planning stage and are clearly integrated with the learning experiences. Assessment is not seen as a scary prospect for the learners but rather an opportunity for both learner and teacher to better understand what progress has been made and what mis conceptions and misunderstandings remain.
Relationships	Interesting and accessible learning experiences make learning enjoyable. The teacher creates and constructs scenarios and tasks that permit failure as a learning experience. Learners are comfortable with misconceptions and welcome the opportunity to learn from them.
Differentiation	Choices are given to learners about what they produce as the outcome of homework to assist those with learning difficulties.
Teacher Frustrations	The amount of time required is a challenge but after the initial investment plans and resources can be reused with small alterations. Enjoyable classes and improved retention of learning beyond short-term recall can provide an opportunity for deeper learning

Stage 5	Stage 5
Role of teacher	Considers potential outcome destination for learners for the duration of a learning cycle, collaboratively with colleagues, as described in their subject specification. Diagnostically establishes the learner's capacity annually, combining the results with experience of previous cohorts to create a tailored learning plan influenced by where the learners are actually at. Identifies the key learning moments in knowledge acquisition, conceptual understanding, disposition, skill and technical development required for the learners to progress towards the stated goals. Highlights potential misconceptions and wrong turns in key learning moments. Devises learning scenarios to exploit these. Collaboratively creates deploys and refines learning strategies which can provide authentic and effective learning experiences for the learners. Regularly reads and researches about ongoing development in subject area and effective pedagogies related to it.
Learner Experience	Clear purpose of what is being learned and how it is going to have a growth effect on the learner's knowledge, understanding and skill. It is carefully considered about how the learner records their learning and that documented record for personal revision purposes is retained. The knowledge, understanding, thinking, disposition and skills is presented in a co-curricular integrated manner. Teachers collaborate within the school community, so they know where there are collaborative opportunities between subject areas In general, learners feel supported and more confident in being more autonomously responsible for their progression
Purpose Methods	Statements of learning, learning outcomes and learning intentions are collaboratively considered and reasoned with before integrating with the annual context of the groups of learners concerned. Discussions take place where past experiences are reflected on and potential learning designs, methods and solutions are debated. Learners are clear how they are progressing and where they are trying to progress to.
Assessment strategies	Assessment is designed collaboratively with department members and is deliberately intertwined with the key learning moments. Discussions take place departmentally about the best assessment fit for the particular suite of learning outcomes and intentions. Feedback to the learners is influenced by a clear understanding of the sought learning destination. Success criteria are used strategically so that learners are aware of where they are on the progress spectrum.
Relationships	All learners are accepted in the manner that they present. Learning is orchestrated considering universal design for learning. All learners can feel as if they are valued and facilitated. There are multiple stations within the classroom. Each learner is progressing at either different tasks, pace or outcomes.
Differentiation	Breadth and depth of the course modified for those who require it. The learning destination and outcomes have been collaboratively discussed departmentally using Must, Should and Could. This translates into modified, core and extended tasks for learners Key learning moments are differentiated by group, task, method, pace, support and product
Teacher Frustrations	The amount of time required initially is considerable and stretches the work/life balance. The need to negotiate with colleagues on strategies and purpose can be challenging initially when used to doing things on your own

Appendix: F. Artefact 2: Lesson Planning influenced by Loughran, Grossman and Korthagen and existing HEI Lesson Plan 2020.

ITE

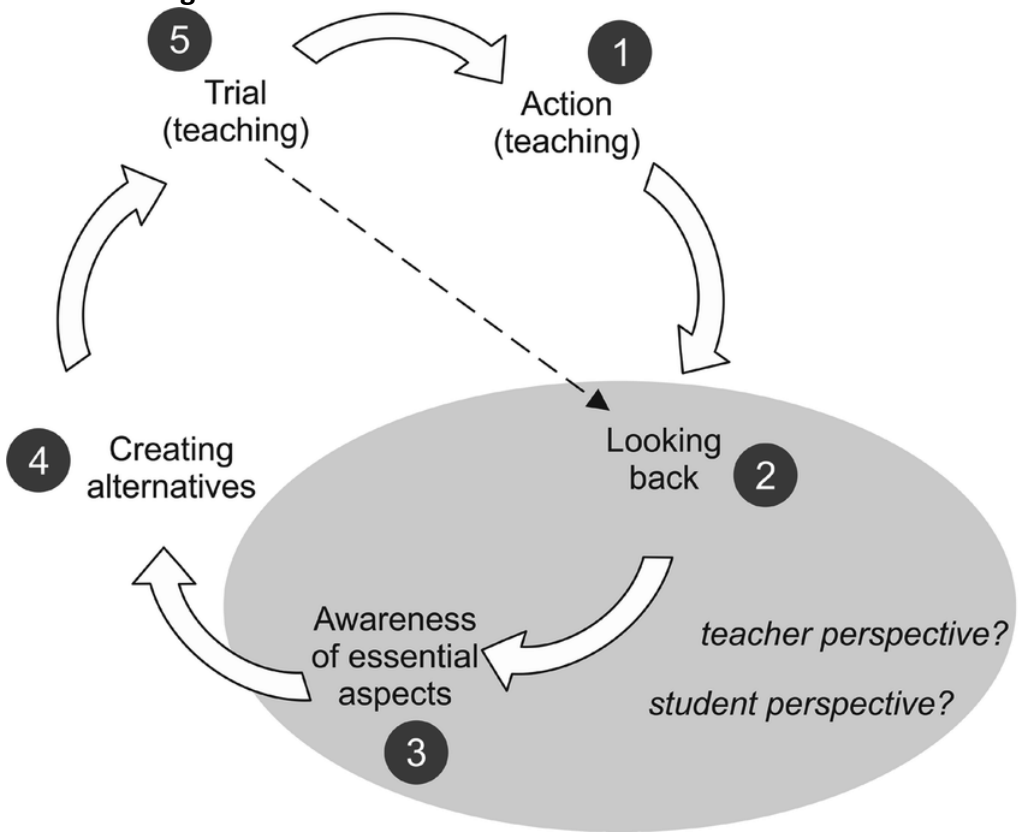
Lesson Plan Template

Subject		**Year Group /Class**	
Theme		**Level(s)**	
Duration of Lesson		**Date**	

Selected Learning Outcome(s)	
Disciplinary significance or purpose of the learning theme or focus	
Learning Intentions (*Importance of verbs***)**	**Success Criteria**
Students will + explicit verb	***Describe graduated success***
Students will be able to + explicit verb	***All, Most, Some, Must, Should, Could concepts***
Know, understand, and do (thinking strategies)	***Accessible language for learner***

Relevant big ideas/subject concepts within the Learning outcomes with student friendly **definitions**:
Connection to prior **student experience** and **learning** where appropriate:
Potential **misconceptions** that may be employed by learners:
Pedagogical Approach adopted for this lesson:
Alternative pedagogical approach considered and **reasoning on** chosen strategy**?**
Describe created or sourced supportive resources for students learning:
Explain how and why learners will be **actively involved** in the lesson**?**
How will students demonstrate their new learning**?**
Differentiation/inclusion strategies:
Homework and out of class activities as appropriate:

Reflection on learning:



Potential Reflective Questions

- Did I plan effectively to support and stretch learners as appropriate?
- How did I personally contribute to or hinder learning today?
- Were the learners enthused, connected, and engaged in the learning?
- Did any unanticipated learner misconceptions come to light?
- Identify a student that did well and one who struggled. Explain why?
- Were there factors (social, psychological, contextual, curricular, pedagogical, behavioural, language, conceptual) that you did not consider during the planning phase?
- Would you change aspects of the plan if you were to repeat the lesson next week or next year?
- How would your experience and the learners' experience of the lesson influence future lessons with this cohort?

The headings are in bold. Hints for PMEs on what could be considered are in grey. It is expected that the grey prompting tools would be deleted during the completion phase by the student.

Appendix G: Artefact 3 Unveiling disciplinary learning intentions through planning

This is an instrument which aims to facilitate practitioners in engaging with complex clinical questions which address the representation of subject disciplinary knowledge in ways which are accessible to young learners. This instrument is not claiming that it is a universal panacea to all potential pedagogical issues. It seeks to highlight some of the fundamental principles which, when addressed, may benefit both learners and teachers alike. This artefact was designed to provide a structure for PSTs to initiate pedagogical reasoning in their early lesson planning. Despite its grid like presentation, it is not to be employed sequentially and can be commenced at any point in a cyclical format. The instrument has been constructed as a digital artefact/resource. Consequentially the hyperlinks do not function in this document, but examples of the other pages linked in this substantial resource are provided underneath.

Step	Links	Development: Pedagogical Reasoning
1.Select a Learning Outcome or group of learning outcomes from the subject Specification	Junior Cycle Specifications NCCA	Choose one(s) that you enjoy, like and are comfortable with first so that you can work with confidence on it. If you feel confident enough you can mix/blend outcomes for this task.
2. Break down what you want the students: **a) to know,** **b) understand (Concepts) and** **c) be able to do (Skills).** **These are the Learning Intentions.**	Examples of learning intentions	Click on the link below to access the learning verbs which clearly describe the learning you want to take place: Notes on page "Learning Verbs" What is a learning intention (Web view)
3. Learner Centred: **What do the learners already know?** **What concepts are hidden within this learning?** **How is what I want them to know**	What is a concept? (Web view)	What larger ways of thinking are integrated into this section of learning? (building blocks) How does this work contribute to the learner's growth and development in the ways of 'thinking' and 'doing' unique to this subject? Subject Discipline thinking

linked to the learner's everyday life meaningfully? **What learning misconceptions and flawed thinking regularly occur for young learners in this area of your subject?** **How can we predict/prepare for and overcome these misconceptions?**		Look at the list of possible concepts that could be integrated in the learning @ What is a concept? How can you unlock the secrets of your subject understanding to a new learner so that they can go on and develop the learning on their own?
4.Design purposeful learning activities which will allow for the students to acquire the knowledge and develop their conceptual understanding and the skills	Paul Ginnis: The Teacher's Toolkit How do they walk on hot sand? Developing questions for the classroom	These are just two links to assist with the creative process. There are many more out there. **Don't forget Magenta Principles** **Have a look at the examples in the** History: The Crusades Example
5.Review JC Key Skills and discuss where they are catered for within your list of learning intentions	Key skills of Junior Cycle Broken down	Often this will just remind you that meaningful learning activities tend to address the key skills naturally
6.Consider a rubric or template for your subject's success criteria which is mindful of the different capacities and strengths of the individual learners concerned.	How to design Rubrics	Simplistic Rubric starter at the link below: Success Criteria Sample Rubric (Web view)
7.Consider Assessment Instruments **What instrument of assessment could we use to enable the learner to demonstrate mastery of the sought learning?**	Assessment Instruments (Web view)	This is only a starting point and different subjects lend themselves to alternatives. The key is tighten up on the purpose(s) of the assessment linking it to the explicit learning intentions. We are looking to move away from 'covering' and rote learning and move more towards opportunities for the learner to demonstrate understanding

Constructivism modifies the role of the teacher to one who places more focus on helping students to construct knowledge rather than to reproduce a series of facts.

The constructivist teacher designs/creates/provides tools such as problem-solving and inquiry-based learning activities with which students form and test new ideas, observe patterns and draw conclusions. Students tend to share their new-found knowledge with their peers.

The teacher does not just tell the student or read to the student. Constructivism **transforms the student from a passive recipient of information to an active participant in the learning process**. Always guided by the expert teacher, students construct their knowledge actively rather than mechanically receiving knowledge from the teacher or the textbook.

Constructivism **taps into and triggers the student's innate curiosity** about the world and how things work. Students do not reinvent the wheel but, rather, attempt to understand how it turns, how it functions. They become engaged by applying their existing knowledge and real-world experience, learning to hypothesize, testing their theories, and ultimately drawing conclusions from their findings. This helps the student to see that although the world they inhabit is complex that it has connections, sequences, structures, rules, patterns and values.

By giving these thinking tools we can **contribute to autonomous learners engaged in their own learning.**

Learning Intentions

The learning intentions are expressed in terms of knowledge, understanding and skills, and link directly with the relevant curriculum document (Specification). The process by which the learning intentions of a particular scheme of work are exposed, looks to uncover the substantive and syntactic disciplinary treasures within the content. It also seeks to maintain the importance of the content in and of itself.

The design of learning intentions starts with the answers to these questions.

- What do I want students to know?
- What do I want students to understand?
- What do I want students to be able to do?

We want to be explicit about the actual learning which we would like to take place rather than just the content to be 'covered' or the activity to be 'engaged' in. This is not saying that the content itself is not worthy of engagement, just that our subject disciplines provide so much more learning opportunities that just content transferal alone.

When forming learning intentions, choose your Learning Verbs very carefully.

Always ask how each of these intentions contribute to the subject's overall learning goals and purpose for this period of study?

Learning intentions that Focus on knowledge

Thinking about the different kinds of knowledge and being specific about the kind of knowledge that is required in a particular situation, will help teachers design their learning intentions.
They consider, for instance,

- Knowledge *about* a particular topic
  (know about different types of energy)
- knowledge of *how* something is done, of the steps involved in producing something
  (know how to construct a pie graph)
- knowledge of *why* something happens
  (know why rabbits are an ecological disaster)
- knowledge of *what* causes something to happen
  (know what causes thunderstorms)

Learning intentions that focus on skills
Learning intentions that focus on skills always start with the words 'to be able to' followed by a verb. For example,

- *to be able to write an account*
- *to be able to solve a problem using more than one strategy*
- *to be able to work as part of a team*
- *to be able to experiment with a variety of media in order to achieve a stated effect*

Often learning intentions that focus on skills will also imply the acquisition of certain knowledge or understandings. For instance, to be able to write an account, students must have a knowledge of the structures and features of an account.

Learning intentions that focus on understanding
Understanding builds on knowledge and requires some kind of processing.
For instance, a student might be able to list the causes of an historical event - thereby showing knowledge of them - but understanding requires analysis and, perhaps, interpretation. Understanding, then, is of a higher cognitive order than knowledge and, in designing learning intentions, teachers ensure that students are exposed to learning which makes those higher demands as well as demands of a lesser nature.

- *Infer the causes of an historical event*
- *Connect the effects of diet on health*
- *Recognise examples of persuasive language that could position the reader to agree with the author*
- *Demonstrate how the internet can be used for research purposes*

Success Criteria Sample Rubric

Student Progression **Areas of learning**	**Minimal** Focus for Improvement ?	**Partial** Focus for Improvement **?**	**Complete** Focus for Improvement **?**
Knowledge1	Focus for Improvement **?**	Focus for Improvement **?**	Focus for Improvement **?**
Skill 1	Focus for Improvement ?	Focus for Improvement ?	Focus for Improvement ?
Concept1	Focus for Improvement ?	Focus for Improvement ?	Focus for Improvement ?

If the teacher was focussing on enabling the learners to demonstrate an understanding of the historical concept "Bias".

Minimal Understanding: Student equates any historical source, regardless of its origin, with a bona fide support for a particular stance or reality.

Partial: Student demonstrates an ability to identify certain sources as being more reliable than others. This is limited to literal interpretations of these sources.

Complete: Student demonstrates a comprehensive understanding of bias. S(he) considers the origin of the source and can decipher the literal and the nuanced within that source.

Subject Discipline Thinking

What are Literacies within the Disciplines? The following lists for each of the major content areas, while not comprehensive, can act as starting points through which communities of teachers can begin to think in terms of disciplinary literacy (Lent, 2016).

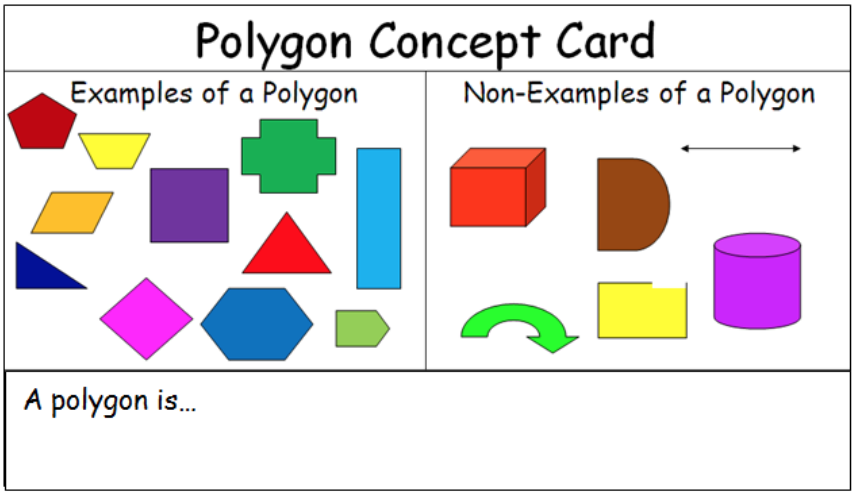
	Read	Write	Think
Science	***When scientists read, they*** • Ask "Why?" more than "What?" • Interpret data, charts, illustrations • Seek to understand concepts and words • Determine validity of sources and quality of evidence • Pay attention to details	***When scientists write, they*** • Use precise vocabulary • Compose in phrases, bullets, graphs, or sketches • Use passive voice • Favor exactness over craft or elaboration • Communicate in a systematic form	***When scientists think, they*** • Tap into curiosity to create questions • Rely on prior knowledge or research • Consider new hypotheses or evidence • Propose explanations • Create solutions
History	***When historians read, they*** • Interpret primary and secondary sources • Identify bias • Think sequentially • Compare and contrast events, accounts, documents and visuals • Determine meaning of words within context	***When historians write, they*** • Create timelines with accompanying narratives • Synthesize info/evidence from multiple sources • Emphasize coherent organization of ideas • Grapple with multiple ideas and large quantities of information • Create essays based on argumentative principles	***When historians think, they*** • Create narratives • Rely on valid primary and secondary sources to guide their thinking • Compare and contrast or ponder causes and effects • Consider big ideas or inquiries across long periods of time • Recognize bias
Math	***When mathematicians read, they*** • Use information to piece together a solution • Look for patterns and relationships • Decipher symbols and abstract ideas • Ask questions • Apply mathematical reasoning	***When Mathematicians write, they*** • Explain, justify, describe, estimate or analyze • Favor calculations over words • Use precise vocabulary • Include reasons and examples • Utilize real-word situations	***When Mathematicians think, they*** • Consider patterns • Utilize previous understandings • Find connections • Estimate, generalize, and find exceptions • Employ mathematical principles
English Language Arts	***When students of English read, they*** • Understand how figurative language works • Find underlying messages that evolve as theme • Assume a skeptical stance • Pay attention to new vocabulary or words used in new ways • Summarize and synthesize	***When students of English write, they*** • Engage in a process that includes drafting, revising, and editing • Use mentor texts to aid their writing craft • Pay attention to organization, details, elaboration and voice • Rely on the feedback of others • Avoid formulaic writing	***When students of English think, they*** • Reflect on multiple texts • Ask questions of the author • Consider research or others ideas • Discuss ideas and themes • Argue both sides of a point

Concepts

A concept is a category that is used to group common things or ideas together.

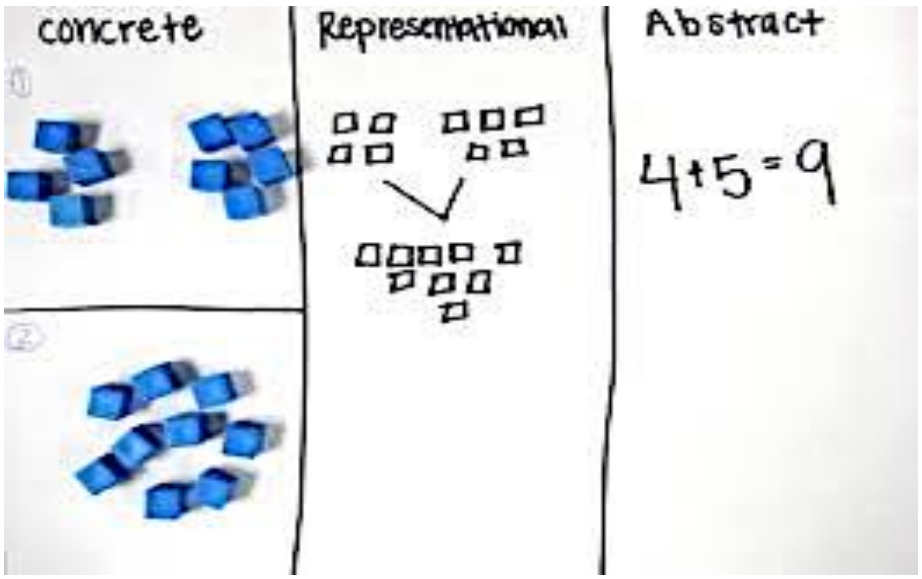
Concrete concepts are generally easier for students to grasp than abstract ones:

We try to introduce conceptual understanding to young learners so that they can recognise patterns, sequences, rules and structures in the complex world around them.



But you can still challenge their understanding…

Are these shoes or socks?



<u>The more abstract the concept the more difficulty that young learners have in grasping it.</u>

As teaching practitioners, it is always helpful to consider the extra life experience that we at our age bring for understanding the world around us in comparison to the young learners whom we orchestrate learning for everyday.

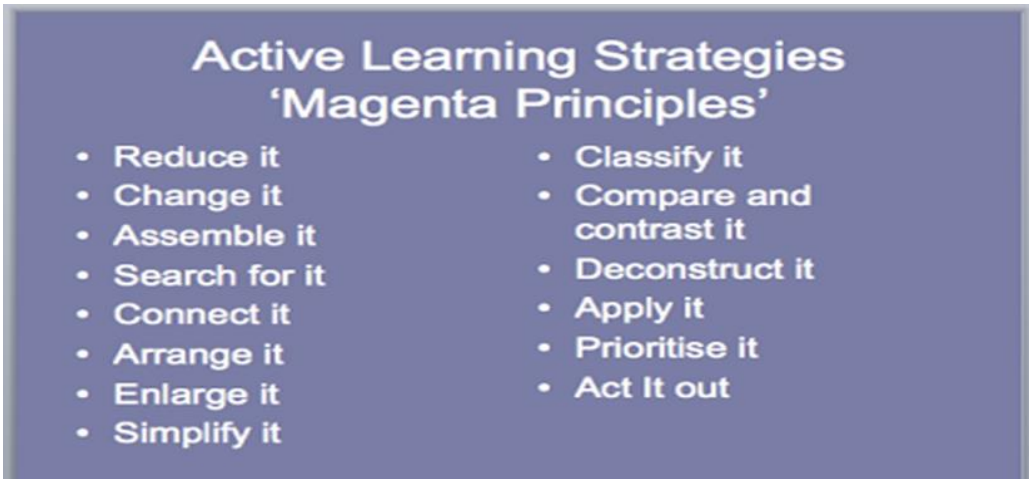
- In our planning for learning it is helpful for us to ask if there is an underlying concept in what we are trying to assist the learners to understand?
- Is there a concept that might unlock a sequence, rule, pattern connection for young inexperienced learners?
- If we helped them identify and understand it would they be able to independently recognise it the next time they saw something similar?

Here are some examples of concepts that students face every day in school:
Some are also skills, but the students need the understanding of the concept to perform the skill

Volume	Moral	Literacy
Mass	Consumerism	Numeracy
Speed	Plot	Rhythm
Energy	Character	Melody
Essay construction	Budgets	Harmony
Formal Writing	Stewardship	Mood
Paragraph	Command Words	Emotion
Environmentally friendly	Nationalism	Wellbeing
Chronology	Colonisation	Ecology
Progression	Power	Change
Cause and effect	Enterprise	Bias
Systems	Punctuation	Objectivity
Contracts	Enterprise	Justice
Creativity	Critical thinking	Truth
Profit	Register	Evidence/Source
Verb	Syntax	growth
Noun	Diversity	decline
Similarities	Restraint	progress
Differences	Empathy	reproduction
Adjective	Culture	perspective
Analogy	Civilisation	realism
Metaphor	Sustainability	impressionism
Formal	Nutrition	risk
Informal	Patterns	probability
	Scale	insurance
		genocide
propaganda	nationalism	Evaluation
desertification	culture	Critique
migration	investment	Declension
fertility	profit	Conjugation
extinction	supply and demand	Density
geology	law and order	Area
responsibility	Rhetoric	Pattern
equalisation	cooperation	Location
water cycle	collaboration	interculturalism
ageing	reflection	respect
Context	adaptability	Courtesy
identity		Analysis

Action verbs: **Students should be able to:**

Action/learning verbs are key to clearly identifying what the learning intention actually is. Ideally the learning action should be demonstrable by the learner. Vague learning verbs such as 'know' or 'understand' are very challenging to truly demonstrate.



Appreciate: acknowledge and reflect upon the value or merit of something

Adapt: make something suitable for new condition, use or purpose

Analyse: study or examine something in detail, break down in order to bring out the essential elements or structure; identify parts and relationships, and to interpret information to reach conclusions

Apply: select and use information and/or knowledge and understanding to explain a given situation or real circumstances

Appraise evaluate, judge or consider a piece of work

Associate: to connect or bring into relation; to fit together and cause to correspond

Argue: challenge or debate an issue or idea with the purpose of persuading or committing someone else to a particular stance or action

Classify: group things based on common characteristics

Comment: give an opinion based on a given statement or the result of a calculation

Compare: give an account of the similarities or differences between two (or more) items or situations, referring to both (all) of them throughout

Consider: Reflect upon the significance of something

Create: to bring something into existence; to cause something to happen as a result of one's actions

Critique: state, giving reasons, the positive and negative aspects of, for example, an idea, artefact or artistic process

Debate: Argue viewpoint or opinion, supporting stance with evidence

Define: give the precise meaning of a word, phrase, concept

Demonstrate: prove or make clear by reasoning or evidence, illustrating with examples or practical application

Describe: tell or depict in written or spoken words; to represent or delineate by a picture or other figure

Design: do or plan something with a specific purpose in mind

Develop: bring to a later or more advanced stage; to elaborate or work out in detail

Devise: plan, elaborate or invent something from existing principles or ideas

Discuss: offer a considered, balanced review that includes a range of arguments, factors or hypotheses; opinions or conclusions should be presented clearly and supported by appropriate evidence

Distinguish: make the differences between two or more concepts or items clear

Evaluate: (information) collect and examine information to make judgments and appraisals; describe how evidence supports or does not support a conclusion in an inquiry or investigation; identify the limitations of information in conclusions; make judgments about ideas, solutions or methods

Evaluate: (ethical judgement) collect and examine evidence to make judgments and appraisals; describe how evidence supports or does not support a judgement; identify the limitations of evidence in conclusions; make judgments about ideas, solutions or methods

Examine: consider an argument, concept or object in a way that uncovers its assumptions, interrelationships or construction

Experiment: to try and test, in order to discover something new or to prove something

Explain: give a detailed account including reasons or causes

Explore: systematically look into something closely; to scrutinise or probe

Find: a general term that may variously be interpreted as calculate, measure, determine, etc.

Group: identify objects according to characteristics

Identify: recognise patterns, facts, or details; provide an answer from a number of possibilities; recognise and state briefly a distinguishing fact or feature

Illustrate: use drawings or examples to describe something

Indicate: to point out or point to; to direct attention to

Infer: use the results of an investigation based on a premise; read beyond what has been literally expressed

Investigate: analyse, observe, study, or make a detailed and systematic examination, in order to establish facts or information and reach new conclusions

Interpret: use knowledge and understanding to recognise trends and draw conclusions from given information

Justify: give valid reasons or evidence to support an answer or conclusion

Make connections: identify links or points of similarity between people, issues, themes or events

List: provide a number of points, with no elaboration

Outline: give the main points; restrict to essentials

Present: to bring, offer or give in a formal way; to bring before or introduce to a public forum

Propose: offer or suggest for consideration, acceptance or action

Provide evidence provide data: work and documentation that support inferences or conclusions

Recognise: identify facts, characteristics or concepts that are critical (relevant/ appropriate) to the understanding of a situation, event, process or phenomenon

Suggest: propose a solution, hypothesis or other possible answer

Synthesise: combine different ideas in order to create new understanding

Use: apply knowledge, skills or rules to put them into practice

Verify: give evidence to support the truth of a statemen

Assessment Possibilities

Traditional Assessment	Alternative Assessment	What Makes it Authentic
Requires right answer	Requires high-quality performance or product, along with justifications of decisions.	Students must be able to think through why they made decisions that resulted in final product.
Questions must be unknown to students in advance	Instructions/questions/purpose must be known to students in advance.	Tasks that are to be judged should be known ahead of time. Rubrics should be provided.
Disconnected from the real world	Tied to real-world contexts and constraints. Requires student to solve realistic problem.	Task is similar in nature as to what would be encountered by a real-life practitioner.
Isolations of skills, focus on facts	A range of skills/knowledge need to be integrated in order to solve a problem.	Tasks are multi-step and multifaceted.
Easily scored	Includes complex tasks for which there may not be a right answer.	Meaningful assessment and feedback is emphasized.
"One shot" approach	Iterative in nature.	Knowledge and skills are used in more than one way.
Given a score	Opportunity to provide diagnostic feedback.	Designed to give practical experience and improve future performance.

Other possible modes of assessment

Abstract	Flowchart	Podcast
Annotated Bibliography	Group Discussion	Portfolio
Autobiography/Biography	Letter to the editor	Question
Blog	Memo	Research Proposal
Brochure	Methods Plan	Review of book
Case Analysis	Multimedia presentation or	Review of literature
Cognitive Map	Essay	Statement of Assumptions
Debate	Narrative	Summary
Diagram	Oral Report	Taxonomy
Description of a Process	Outline	Thesis sentence
Diary	Personal Letter	Vlog

Sample Lesson Plan using this method:

Selected Statement of Learning

SOL 8: The student values local, national and international heritage, understands the importance of the relationship between past and current events and the forces that drive change. Students will explore why certain historical events are commemorated, such as the Holocaust; they will investigate the historical roots of a contemporary issue or theme, and examine how, for example, the Crusades have impacted on the modern world

Learning Outcome to Learning Intention

Topic: The Crusades

Learning Intentions: Making explicit for learners what they will know, understand and be able to do.

Learning Outcome 3.1: investigate the lives of people in one ancient or medieval civilisation of their choosing, explaining how the actions and/or achievements of that civilisation contributed to the history of Europe and/or the wider world.

First step: unlocking the learning contained within this outcome and separating it out into learner centred intentions under the headings: know, do and understand.

Know

The students will:

- Identify the key geographical and political realities of the time period. (Kingdoms/Power/Influence)
- Prioritise factors that influenced the start of The Crusades
- Explain reasons why European rulers decided to join The Crusade
- Explore what the Crusaders learned from the people of the Middle East? (Cultural, technological/mathematical etc?)

Understand

The students will reflect on the following concepts during and after this series of lessons

- Human motivation/Human Condition
- Patterns, cycles and sequences of history
- Perspectives on events/issues.
- Bias and Objectivity
- Cause and effect

It is accepted that these complex concepts will be addressed across numerous schemes of work and academic years. The depth and breadth of understanding will be grown incrementally. Further schemes will be cognisant of the progression of the learners with these concepts

To do

Students will be able to:

- Research a version of the Urban II speech inferring plausible truths and biases in the source.
- Write formally, integrating examples of primary and secondary sources as support for their position and perspective.
- Write formally displaying logical examples of critiquing ancient sources for suspected bias and subjectivity.
- Connect actions from a thousand years ago to an ongoing cycle of aggressive interactions between east and west.
- Prepare a reflection digitally on how their understanding of one of the stated concepts has altered or extended during this series of lessons
- Choose a piece of modern technology or understanding and trace its evolution back to an influence from the time of the Crusades

Key Skills: This series of lessons connects with each of the eight key skills of Junior Cycle.

Possible Activities

- Design a papal poster to be dispatched to all Christian knights and barons encouraging them to join the latest crusade.
- Compare two of the accounts of Pope Urban II speech at the Council of Clermont
- Debate the morality of combining pilgrimage and war, killing and absolution.
- Predict what might have happened to Europe had the Crusade not occurred.
- Connect influences that the Europeans were exposed to in the Middle East with the social cultural and technological changes about to begin in Medieval Europe.
-

Next Steps for Teachers:

- Devise and describe success criteria for each of the learning intentions
- Consider possible assessment instruments that would provide clear evidence on student progression in learning.

Links

https://www.assessmentforlearning.edu.au/professional_learning/modules/learning_intentions/learning_intentions_landing_page.html

https://www.jct.ie/perch/resources/history/history-quick-referene-guide.pdf

https://sourcebooks.fordham.edu/source/urban2-5vers.asp

http://agti.ie/16/02/2018/planning-for-the-junior-cycle-geography-specification-ready-get-set/

Potential resource for this class:

France 1095

Dear Lords and Barons of Western Europe,

"Although, O sons of God, you have promised more firmly than ever to keep the peace among yourselves and to preserve the rights of the church, there remains still an important work for you to do. Freshly quickened by the divine correction, you must apply the strength of your righteousness to another matter which concerns you as well as God. For your brethren who live in the east are in urgent need of your help, and you must hasten to give them the aid which has often been promised them. For, as the most of you have heard, the Turks and Arabs have attacked them and have conquered the territory of Romania [the Greek empire] as far west as the shore of the Mediterranean and the Hellespont. They have occupied more and more of the lands of those Christians and have overcome them in seven battles. They have killed and captured many and have destroyed the churches and devastated the empire. If you permit them to continue thus for a while with impurity, the faithful of God will be much more widely attacked by them. On this account I, or rather the Lord, beseech you as Christ's heralds to publish this everywhere and to persuade all people of whatever rank, foot-soldiers and knights, poor and rich, to carry aid promptly to those Christians and to destroy that vile race from the lands of our friends. I say this to those who are present, it meant also for those who are absent. Moreover, Christ commands it.

"All who die by the way, whether by land or by sea, or in battle against the pagans, shall have immediate remission of sins. This I grant them through the power of God with which I am invested. O what a disgrace if such a despised and base race, which worships demons, should conquer a people which has the faith of omnipotent God and is made glorious with the name of Christ! With what reproaches will the Lord overwhelm us if you do not aid those who, with us, profess the Christian religion! Let those who have been accustomed unjustly to wage private warfare against the faithful now go against the infidels and end with victory this war which should have been begun long ago. Let those who for a long time, have been robbers, now become knights. Let those who have been fighting against their brothers and relatives now fight in a proper way against the barbarians. Let those who have been serving as mercenaries for small pay now obtain the eternal reward. Let those who have been wearing themselves out in both body and soul now work for a double honour. Behold! on this side will be the sorrowful and poor, on that, the rich; on this side, the enemies of the Lord, on that, his friends. Let those who go not put off the journey, but rent their lands and collect money for their expenses; and as soon as

winter is over and spring comes, let them eagerly set out on the way with God as their guide."

The colour coding on this resource examines how simple scaffolding can assist with differentiation. In this case students could be given a clean version and a highlighted version while being asked to consider the same questions. The highlighted text in this case concentrates the weaker student's attention on the pertinent sections of text.