

**The essential nature of on-the-job thinking:
A phenomenological study of health and fitness
professionals engaged in learning experiences.**

Matthew Muscat

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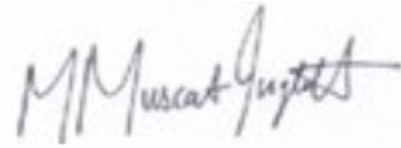
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DECLARATION

I, the undersigned, Matthew Muscat, hereby declare that I am the sole author of this thesis, and that it is entirely my own work.

No aspects of the work have been previously submitted to any other university or institution for any purpose whatsoever.

A handwritten signature in black ink, appearing to read 'M Muscat' followed by a stylized flourish.

MATTHEW MUSCAT

4th August, 2018

ABSTRACT

For as long as learning is considered to include a *cognitive* element, then questions about how, and indeed, why, we think, remain crucial considerations for stakeholders in education, learning, and professional development. This study explores thinking in the specific context of *on-the-job* learning, or in other words, the essential nature of *on-the-job thinking*. Research generally portrays on-the-job learning, and the thinking assumed to take place therein, as an increasingly complex and poorly understood process. Beginning from a position rooted in health and fitness sector-specific research, and subsequently venturing into the wider landscape of fundamental theories in education and learning, a review of literature identifies the tendency for on-the-job learning to occur predominantly *tacitly*, as a main contributing factor to an evident impasse in our attempts to understand or study it further. The review subsequently traces this tacit-ness problem to its roots in cognitive science, or more specifically, in dual process theories which depict thinking as an action that is either conscious or unconscious (tacit). Despite a clear juxtaposition of *doing* and *thinking*, and the apportioning of comparative importance to the two, theories and models in education and learning seeking to expound the learning process, typically rely on definitions of thinking that are unclear or inconsistent, and fundamental concepts, typically originating from cognitive science, that are obscure and/or paradoxical. It is argued, therefore, that in order to further our understanding of on-the-job learning, a clearer and more robust definition of thinking is warranted, as an alternative theoretical foundation for modern education and learning theories, based not solely on explanations derived from cognitive science, but also on descriptions derived from more philosophical endeavours, namely, phenomenology. Following a deep and reflective phenomenological analysis of personal fitness trainers' accounts of their on-the-job thinking, using modern as well as classical phenomenological methods, the study aims to, first, uncover a re-conceptualised and less problematic description of on-the-job thinking, and second, to evaluate the actual implications of such a re-conceptualisation. The description that results, which is also presented in the text as an analogy, casts light on the centrality of feelings, as well as concepts either general or pertaining to self, as key influential factors guiding on-the-job learning outcomes, portrays on-the-job thinking as an integrated activity that is not isolated or separated from interaction with self, other, or the world, and finally, challenges traditional conceptualisations of thinking in light of the challenging notions of conscious awareness and volition. In so doing, the results of this study provide an alternative view of thinking in the context of on-the-job learning by personal fitness trainers, or indeed other professionals, from a conceptual/theoretical standpoint, while also revealing specific features of the phenomenon with immediate and more practical applications as prospective constituents of existing initiatives or interventions designed to facilitate and enhance on-the-job learning in the health and fitness sector, and perhaps further afield.

Keywords: *On-the-job learning, Experiential learning, On-the-job thinking, Thinking in action*

Chapter one: Introduction

1.1 Preamble

How do cognitive acts manifest in the continuous day-to-day qualitative experience of thinking with which we are so familiar? Why do such acts even possess this distinctive qualitative characteristic in the first place? If modern computers are capable of processing substantial amounts of information, are they, or will they ever be, capable of *thinking*, at least in the way human beings qualitatively define it? How, for that matter, might we define thinking, exactly? And how would we know, if they, or indeed any life-form other than our own, experienced the same palpable qualities that we do when we think?

To speak about thinking, or ask such philosophical questions, is to suggest that it is a *thing*, and therefore, simply must have some kind of essential and describable nature of its own that makes it so. But the notion of a distinctive thing being able to truly relate to, or directly see, itself, is paradoxical for almost any thing other than thinking. While we entertain the apparently real capability of thinking about thinking, its essence remains precariously difficult to directly capture or define, like an object in the darkness that can be viewed only indirectly, by looking slightly above, below, or to either side of it, only to disappear the moment it is directly attended to by the human eye. To even deliberate or entertain such a capability, of a thing like thinking being able to cast itself in plain sight, is, precisely, to *think about thinking about thinking*, a pursuit of the ever-receding kind, chasing the shadows of thought acts, rendering thinking itself, and its true essential nature, evermore elusive and obscure.

To the education and learning theorist, the pursuit of personal growth and wisdom, and the acquisition of knowledge, represent central features of human experience necessarily inclusive of this pervasive phenomenon we call thinking. According to Palmer, Socrates famously denied being a teacher, based on the assertion that he, in fact, knew nothing. By negating the possession of knowledge, and instead favouring the process of asking questions, Socrates cast light on the notion of the idea of a process, a way, or a *method*, of “reasoning things out” (2003, 6). In this view, experience itself may be conceptualised as a sort of grand teacher, or as fertile land for those intent on harvesting the abundance of learning opportunities presented by day-to-day situations and episodes, if, like Socrates, they can only ask the right questions, assuming of course, there is such a thing as the *right* question. Experience, in this sense, is like an arena, where the elusive phenomenon of thinking, both overt and covert, and the unfolding events and interactions between people and objects in the world, meet, engage with, and react to, one another. Education and learning theorists typically look on, surveying this confluence, examining the new skills, knowledge, attitudes, or beliefs emitted, striving to understand the precise mechanisms that must underlie their emergence. A quote by Gilbert and Trudel (2006), on the notion of experience, represents a fitting point of departure here, and was particularly resonant with the early interests and philosophical musings leading up to the undertaking of this study;

“Ten years of coaching without reflection, is simply one year of coaching repeated ten times.” (Gilbert and Trudel, 2006, 114)

Brookfield (1998, cited in Cromley, 2000, 108), made the earlier more general assertion that some adults may have “one year repeated 40 times, rather than 40 years experience.” The notion of *professional experience*, or rather, the considerable ambiguity it denotes upon any closer evaluation of its meaning, combined with a persistent curiosity about the essential nature of thinking, represented early, yet still relatively indistinct, research interests. The convergence of these interests into a more distinctive, coherent, and workable research topic, is chartered throughout the remainder of this introductory narrative.

In further more inquisitive consideration of Gilbert and Trudel's assertion, the claim by a professional to have *ten years of experience*, is, upon closer examination, inherently problematic. Indeed, such a claim made by any two professionals in a given field, offered up as a form of credential, might actually represent quite disparate orders of proficiency, competency or expertise. Both a successful as well as an unsuccessful professional, regardless of how one might choose to define their success, can both make valid claims about the *amount* of experience they possess. Making valid claims about the *value* of such experience, however, is a different and substantially more difficult matter altogether. Did each year represent a progression of knowledge and/or ability compared to that preceding it? Did each year represent merely a maintenance of knowledge and/or ability, or worse, a regression? How, still, would one even clearly determine progression, maintenance or regression in this sense?

The claim to any amount of experience implies an accrual of knowledge and/or ability arising from repeated exposure to related occurrences, situations and episodes within a

defined workplace context. Such accrual can only take place if, at given stages between successive episodes or situations, a professional either knows, or is able to do, something different. Change to knowledge and/or ability in turn implies a change in competence or efficacy where similar situations and episodes are likely to re-occur. While *accrual of knowledge and ability*, or, *change in competence*, would represent gross oversimplifications of the phenomenon of learning from experience, should they be posited as proper definitions, they certainly allude to at least some of its essential features. The initial desire to uncover just such essential features, and understand the *nature* of experience, or more specifically, the nature of the learning that facilitates/accompanies it, constituted a tangible genesis that served to ground the research effort, and prompt the initial stages of a review of literature.

1.2 Context

The earliest readings carried out, along with some of the insights and problems that began to emerge, are chartered in the first part of chapter two. The readings were, at this stage, grounded in the specific context of the *health and fitness sector*. The health and fitness sector comprises health clubs, fitness centres, and indeed any organisations offering services which are, broadly speaking, designed to improve consumers' general health, fitness, and lifestyle. In 2016, the European health and fitness sector served over 52 million consumers, employed approximately 650,000 people, and generated over 26 billion Euro in revenues (EuropeActive, 2016). Considered to operate at the “front line” of this sector in terms of human resources (Maguire, 2001; De Lyon and Cushion, 2013), personal fitness trainers (PFTs) design and deliver personalised physical training and healthy lifestyle interventions for individual clients, or small groups of clients, according to a wide range of health and fitness goals. PFTs generally work on a freelance, self-employed, basis, or are affiliated with health clubs or fitness centres in accordance with various contractual agreements. Their job role is considered to be multifaceted, combining the need for specialised knowledge and skill-based competences, in a professional landscape of ever-evolving trends (Maguire, 2001; Rosado et al., 2014). The accommodation of a multifaceted role, and the need to continuously adapt in a rapidly evolving sector, renders PFTs an enticing population for exploring professional development and learning. Following a 14-year career working as a PFT, or alongside other PFTs, the context in which this research is conceived, is discerned in Annex 1, in a detailed exposition of researcher positionality and reflexivity.

Chapter two proceeds by highlighting some of the problems and limitations associated with sector-specific research on the acquisition of knowledge by fitness professionals. In view of the pertinent gaps identified, a central argument is made, that efforts to maximise on-going learning by PFTs, should be based on a deeper understanding of the essential nature of on-going learning from experience, permitting the delineation of an increasingly concise set of research aims.

1.3 Aims

In the sector-specific literature, knowledge acquisition and translation (into practice) by fitness professionals was portrayed as increasingly precarious, and a significant knowledge gap revealed precisely by the lack of scholarly work aimed at discerning its fundamental nature. A key paper by De Lyon and Cushion (2013) was particularly influential at this stage of the review, in establishing the centrality and importance of on-going professional learning in the health and fitness sector. With respect to the developing interest in professional experience and the learning comprised therein, a more specific mode of learning was delineated and defined more succinctly as *on-the-job learning* (OJL). Justification for the selection of this specific term, which is used throughout the remainder of the thesis, is also elaborated in the initial stages of chapter two. Following the identification of an evident impasse in the further study of OJL, mainly due to the problem of it being predominantly *tacit* (hidden), a crucial reduction was carried out, representing an important and further converging research interest, towards the yet more specific problem of tacit on-the-job *thinking*.

The theoretical roots of the tacit thinking problem represented an engaging and increasingly refined topic throughout the ensuing review, eventually resulting in the sourcing of literature from a further three main bodies, in an attempt to discern what is currently known about its fundamental and essential nature. The three additional bodies included literature on, fundamental theories of education and learning, cognitive science, and philosophy of mind/phenomenology. The term *thinking* is used here in its generic sense, to avoid other more specific locutions carrying alternative connotations in the context of existing research. Thinking, in this respect, is intended to include any

activities associated with what we call the mind, involving, but not necessarily limited to, considering, reasoning, or otherwise processing ideas, perceptions, and other internal representations of self and the world, with an affective influence on ensuing mental or otherwise subjective states, behaviours or outcomes.

By invoking Auguste Rodin's *The Thinker*, a sculpture which depicts Dante (in Dante Alighieri's *Divine Comedy*) seated on a pedestal at the gates of hell, thinking, Greeno (1997, 118) presents some compelling insight regarding general perceptions and beliefs about the notion of thinking in Western culture. The sculpture portrays *The Thinker* engaged in an activity that appears solitary, detached, and perhaps, given his location at the gates of hell, even painful. The solitary and detached aspects of Rodin's depiction, according to Greeno, are echoed in more modern conceptualisations of thinking based on the behaviourist and cognitivist paradigms, which are discussed in more depth in the third body of chapter two.

The theoretical roots of current conceptualisations of thinking are used throughout the ensuing thesis, as a basis for questioning its fundamental and essential nature. It is argued that such theoretical roots have resulted in misleading or obscure ideas pervading modern research, and in turn led to additional problems in more specialised fields, like OJL, that are principally dependent on a clear understanding of thinking as a phenomenon. Brown (1988, 6) similarly highlighted the "misleading" and pervasive theoretical separation in modern assumptions about thinking, as alluded to by Greeno in his artistic interpretation of Rodin's *The Thinker*, between knowledge as "self-contained and discreet", isolated, and essentially distinctive from, practical contexts. This

theoretical separation requires, therefore, that the primary entities (*knowledge/theory* on the one hand, and *practice* on the other), as a result of their fundamental disconnection, be somehow bridged. The problem of having to subsequently discern the mechanisms by which knowledge/theories must cross that bridge, or be made *transferable* (or *translatable*), to practice, becomes palpable as an academic endeavour, a challenging enterprise exacerbated precisely by the problematically conceptualised tenets upon which it rests.

Throughout the review of literature, it became clearly evident that the phenomenon of on-the-job thinking is considered, in the modern research context, to be substantially complex, and poorly understood (Eraut, 2004). The efforts of traditional academic and scientific disciplines in discerning its nature have meanwhile resulted in obscurities, problems, paradoxes, and philosophical quandaries. More disconcerting at this juncture, was the evident rooting of modern education and learning theories specifically pertaining to OJL, in just such problematic foundations. A discussion on the underpinnings of the thinking aspects of learning *from*, or *through*, experience remains a prominent theme throughout chapter two, in which David Kolb (1984; 1999) and Michael Eraut (2004) stand out as particularly influential and key proponents. The central argument is made, in favour of a warranted re-conceptualisation of on-the-job thinking, along with the articulation of clearer and less problematic definitions of the phenomenon, as a more robust underpinning for modern theories of learning pertaining to OJL.

In framing this argument, some basic assumptions underlying prevailing contemporary approaches to understanding OJL are challenged in the latter parts of chapter two, setting the stage for the development of a tangible philosophical and methodological position. Questioning the *value* of bodies of experience, or the *validity* of experience claims, for instance, requires the formulation of judgements made on empirical grounds. The attribution of value, as a designated property of accrued experience depends on such a property being objectively (and empirically) measurable. In other words, judgements about the value of knowledge and ability arising from professional experience can only be made from a standpoint based on *objectivity*, by identifying, comparing and correlating objectified criteria. While traditional objective learning outcomes, by definition, indeed represent workable criteria against which the relevance of knowledge and ability can be measured or assessed, the ensuing discourse on OJL throughout the development of this thesis, exposes some limitations of this view.

Objective assessment of set learning outcomes does not necessarily capture the totality of *actual* learning outcomes resulting from a particular, or series of, learning experience/s. Assessing the achievement of various specific learning outcomes from an external objective viewpoint, is an altogether different venture from establishing the learning outcomes that are actually achieved, from the internal viewpoint of the subject. The relevance and value of the actual learning outcomes achieved in this respect, become increasingly problematic to measure objectively, since they are dependent on various factors that are challenging to ascertain, such as personal attitudes, beliefs, and motivation, as well as individual conceptualisations of what it means to be a good or successful PFT. A qualitative philosophical and methodological position is thereby established, rooted, broadly speaking, not in objectivity, but in subjectivity.

Understanding the essential nature of on-the-job thinking, from the subjective viewpoint of PFTs, is presented, throughout the latter part of chapter two, as a worthy research aim, and an important fundamental step towards developing or refining any means of potentially maximising or otherwise enhancing the wider phenomenon of OJL. The emerging arguments at this stage were influenced by key insights from Osman (2004), Logie (2004), and Dennett and Kinsbourne (1992), in a critique of traditional objective science approaches to conceptualising the phenomenon of thinking. Ekebergh (2007) and Carruthers (2014; 2017) subsequently assume prominence in yielding alternative and original perspectives on the emerging problems. An explication of the fundamental essential nature of on-the-job thinking by PFTs is consequently established as the principal aim of the study, with a discussion on the practical applicability of such insights with respect to enhancing OJL throughout the career span, its secondary and contingent aim. In conclusion of chapter two, these main research aims are consolidated into a set of two research questions.

1.4 Methods

Following the articulation of two main questions in the conclusion of chapter two, a philosophical and methodological position of the study is clearly discerned in chapter three. Based on its ontological and epistemological implications in the context of modern research, phenomenology is established as the main philosophical paradigm. Three perspectives were assumed in the development and elaboration of phenomenology into a systematic research method, duly equipped to explore the essential nature of on-the-job thinking based on the subjective interview-sourced accounts of fitness professionals. First, a qualitative interpretation of a universal scientific method was synthesised as its foundation. Second, the methods of classical phenomenology in the style of Edmund Husserl (1859-1938), Martin Heidegger (1889-1976), and Maurice Merleau-Ponty (1908-1961) were affirmed as its fundamental components. And third, the practical systems and tools used by modern phenomenological researchers were incorporated into its architecture, drawing on the central ideas of Smith and Osborn (2008) and Giorgi et al. (2017). In relation to the main philosophical assumptions and research questions, therefore, a five-step research method based on a deep phenomenological analysis participants' accounts of their on-the-job thinking is duly presented.

Following the implementation of a pilot study to test and refine the research method, its application, with a main sample of ten PFTs, is detailed in the remainder of chapter three. Given the qualitative phenomenological stance of the researcher, the findings in this study were considered as co-produced by the both the participants and the researcher. In this respect, prior to an exposition of the findings in chapter four,

disclosures of the researcher's position and background, as well as the backgrounds of each of the participants, are included in Annexes 1 and 3 respectively. Basic information about each participant is outlined in Annex 3, including years of experience, area/s of expertise, and a brief overview of the main points discussed in each interview.

1.5 Contribution to knowledge

The emergence of interpreted annotations, themes, superordinate themes, and final themes are transparently explicated in chapter four to reveal the main activities and decisions carried out by the researcher at important phases of the data collection and analysis phases. The narrative at this stage is rich in participants' accounts, adopting key terms and phrases, in their own words, as a basis for the final composite summary of the essential nature of their on-the-job thinking, presented in conclusion of chapter four. In accordance with the five-step research method, however, the final composite summary was considered only as an *initial* eidetic description, representing only a completion of steps one to three among the total five.

Chapter five subsequently proceeds with a continuing and deep evaluation of the initial eidetic description, representing an execution of step four of the research method, in the development and articulation of a *final* eidetic description. The method terminates at step five, by framing the results in relation to the first research question, constituting the first part of the researcher's original contribution to knowledge, via the presentation of the final eidetic description itself, and accompanying analogy.

In chapter two, the theoretically problematic nature of OJL was attributed to obscurities in the most fundamental concepts underpinning the thinking aspects of education and learning theories pertaining to OJL, predominantly rooted in cognitive science. The final eidetic description of PFTs' subjective accounts of their on-the-job thinking is therefore presented with a view to addressing some of these obscurities, and positing an

alternative philosophical underpinning for education and learning theories pertaining to OJL. In other words, a phenomenological description is posited as an additional prospective component for the basis of theories pertaining to OJL, as an alternative to their current reliance on explanations derived primarily from cognitive science. Next, in addressing the second research question, the practical implications of a phenomenological description of on-the-job thinking are discussed in chapter five, with a view to facilitating a revival of research and development in the field of OJL, representing the second part of the researcher's original contribution to knowledge.

Conclusions and applicability of the findings are finally consolidated in the sixth and final chapter, drawing specifically on important and original aspects of the findings. It is intended, through the provision of a re-conceptualisation of on-the-job thinking, and a prospective revival of research and development in the wider field of OJL, in accordance with the primary implied motives underlying such research in the health and fitness sector and perhaps beyond, that stakeholders be furnished with new and innovative means of maximising and enhancing learning, furthering professional knowledge and abilities, raising standards, and ultimately assisting learners themselves in accomplishing their personal and professional goals.

Chapter two: Review of literature

2.1 Preamble

This chapter presents a review of four main bodies of literature, selected according to their relevance with respect to the initial research interests outlined briefly in the previous chapter which were based, first and foremost, on the desire to more deeply understand the essential nature of PFTs' on-going learning, following the cessation of formal education and training. Literature was initially appropriated for inclusion based on its potential contribution to a systematic and theoretically sound discernment of what is currently known about OJL in the health and fitness context. The sourcing and selection of relevant books, articles, and other materials thereafter was a sequential and adaptive process, departing from the sector-specific literature, and evolving according to emerging problems, issues, and gaps. An exposition of the nature of this adaptation is interwoven in the narrative, with explanations of, and justifications for, the inclusion of relevant works presented at key points throughout the chapter.

The first body collates research undertaken in the exercise and fitness sector, to explore existing knowledge about OJL, in the specific learning contexts encountered by PFTs in practice. While various foci were noted in the sector-specific literature, a special emphasis was placed on scholarly work dedicated to the *acquisition of knowledge* by fitness professionals. This yielded some insight into the nature and prevalence of OJL in the field, but more importantly, flagged some important clues about the hindrances that have thus far limited our understanding of such learning, effectively rebuffing

further research efforts that might have illuminated its underlying factors and essential features.

A further probe into the more specific *thinking* aspects of OJL later warranted an investigation of deeper and more fundamental theories of learning and education, with a particular focus on learning from experience and in environments not typically structured for learning. Such learning is generally described in the literature in various ways, including the commonly cited term, *informal learning*. Use of terminology is clarified and discussed in relation to this study, including the adoption of OJL as a key term, throughout the narrative. This second body of literature appraised more specific scrutiny on the phenomenon of thinking, attempting to delineate it from, as well as locate it within, the wider context of OJL. Robust definitions of acts of thinking, as well as a dissolution of the problems preventing the extrication of such definitions, remained elusive from the theoretical perspectives rooted in learning and education theory, engendering the appropriation of a third body of literature based on thinking and cognition theory.

A review of thinking and cognition literature duly permitted a further reduction of the problematic nature of tacit *learning* (and the tacit *thinking* assumed to exist therein) identified in the previous two bodies, to the yet more specific notion of *consciousness*, and common pervading conceptualisations of thinking and learning in terms simply of its absence or presence. A general impetus was acknowledged throughout the review, most notably via its prevalence in both the second and third bodies, towards

conceptualising thinking and learning in terms of what they potentially could or should be, rather than what they actually are.

The centrality of the subsequent problem of indiscernible consciousness, as well as the insufficiency of prevailing approaches in sector-specific learning, education, and cognition theory in expounding the nature of thinking as it actually occurs in the context of OJL, warranted review of a fourth and final body of literature based on consciousness and phenomenology. The problematic nature of thinking and OJL was finally considered at a deep-rooted level, and promising methodological approaches elucidated for further prospective research efforts, aspiring to explicate their fundamental nature. In the conclusion of this chapter, insights, observations, and relevant approaches sourced from all four bodies of literature reviewed are finally collated and developed into a set of two main research questions.

2.2 Body one: Sector-specific research

2.2.1 Prevalence and importance of on-the-job learning

Through their exploration of the “acquisition and development” of knowledge among a sample of 11 fitness trainers in the UK, De Lyon and Cushion (2013) presented a key paper and a compelling point of departure for this review. In a qualitative interview-based study, the researchers aimed to study knowledge acquisition and development with a specific emphasis on applied practice. After reinforcing a sector-wide need for suitably-qualified fitness professionals as an important priority, they suggested that research had failed to demonstrate how modern fitness professionals accommodated the complex and “multifaceted” nature of their role with relevant knowledge acquisition (2013, 1407). Furthermore, according to De Lyon and Cushion, existing formal channels had failed to suitably equip fitness professionals with sufficient or suitable knowledge for “real-world” contexts (2013, 1408).

The learning experiences described by the participants were classified according to a framework of formal, non-formal, and informal learning (Coombs and Ahmed, 1974, cited in De Lyon and Cushion, 2013, 1411). In the education literature, the terms ‘formal’, ‘non-formal’, and ‘informal’ are typically used to define degrees of organisation, structure, intent, and recognition in various articulations of learning, with each variable applicable in ever-decreasing value when shifting from the formal to informal ends of the implied theoretical spectrum. In other words, according to the European centre for the development of vocational training (Cedefop), while formal learning is organised, structured, intentional, leads to certification, and is typically associated with academic settings, informal learning is unplanned, unstructured,

unintentional, does not lead to certification, and is typically associated with practical or work-based contexts (Tissot, 2004). In a key paper addressed to the European Parliament, Mason described informal learning in particular, as “intimately related” to job performance, accounting for “a good deal of the learning arising out of interactions with colleagues, ad hoc personal studies, and experience of work itself” (2002, 8).

With respect to the implied formal-informal dialectic, therefore, De Lyon and Cushion concluded that the *formal* learning mechanisms available to the participants did not suitably prepare them for practice as fitness trainers, and, in corroboration of Mason’s (2002) view, that the majority of relevant and applicable learning actually occurred after its completion, in a more *informal* way. They defined this latter form of learning as a “dynamic, social and on-going endeavour” (2013, 1417). According to the majority of the participants themselves, “*on-the-job*” learning was explicitly cited as the “most important way of developing knowledge” (2013, 1413), a position incidentally corroborated by management personnel in an earlier study by Melton et al., who similarly accredited “most of their practical skills” to such “*on-the-job*” learning (2010, 3178).

Fitness trainers and managers appeared to intuitively differentiate learning that was formal, preparatory and set in an educational context, from that which was informal, on-going and set in a practical work-based context (Melton et al., 2010; De Lyon and Cushion, 2013). While we know that fitness professionals do in fact generally value the technical and scientific knowledge associated with the profession normally sourced via formal channels (Rosado et al., 2014, 29), they also understand the prevalence and

importance of on-going informal learning in an industry characterized by a constant state of flux (De Lyon and Cushion, 2013, 1416; Rosado et al., 2014, 28).

Some of the prevailing learning activities described by fitness trainers in the sector-specific literature include the performance of additional research following episodes at work using a variety of information sources, and interaction with others (Stacey et al., 2010, 4; De Lyon and Cushion, 2013, 1414). Such activities ostensibly include varying degrees of planning, structure, and intent, which are the main criteria used by Cedefop (Tissot, 2004) in differentiating formal and informal learning. Activities cited by fitness professionals also conform with those frequently described in research on *work-based learning* (WBL) which has similarly been defined as, “learning for work, learning at work, and learning through work” (Jedaar et al., 2009, 477). As a term, WBL, which is discussed in further detail later on in this chapter, is generally associated with, and therefore latently connotes, the exploration of formal, structured, and supervised interventions designed to enhance learning for, at, or through work, and not with a dedicated and rigorous exploration of its essential nature as a phenomenon. Another popular term in the field, *problem-based learning* (PBL), which has been posited as a new alternative to direct instruction in higher education, particularly in the medical field, similarly connotes methodical, step-based interventions and initiatives, as well as associated research studies designed to test its efficacy (Winarno et al., 2018). In other words, PBL is characterised more specifically as a method, rather than a branch of learning and education theory, (as might be expected bearing in mind the aims of *this* study) aimed at discerning the essential nature of some uniquely recognisable form of learning occurring during episodes and situations with a problem-solving characteristic.

For the purpose of disambiguation at this stage, therefore, use of the terms *informal learning* or *WBL* were considered inappropriate in the specific context of this study. Instead, the term *on-the-job learning* (OJL), as articulated by fitness professionals themselves in their own words (Melton et al. 2010; De Lyon and Cushion, 2013), was considered to be a more appropriate locution for all learning resulting from, or inspired by, single or multiple related episodes and situations occurring at work either independently or intermittently across varying periods of time (including isolated incidents or indeed an entire career span), and representative of various degrees of planning, structure, and intent (which may include activities associated with both formal or informal learning). The term was also selected, in its distinction from other popular terms cited in the literature, to avoid connotation with research aimed at anything other than a dedicated exploration of essential nature.

2.2.2 An outcome-based approach to on-the-job learning

Provided that the assertions that OJL comprises the majority of effective learning by fitness professionals (Melton et al., 2010; De Lyon and Cushion, 2013), and yet is poorly understood (De Lyon and Cushion, 2013, 1413), are valid, then an intriguing knowledge gap is revealed. Just as the desire to understand how children learn at school has inspired research in mainstream education to maximise the efforts of educators, teachers and administrators, the desire to understand how fitness professionals learn at work may be expected to have similarly inspired sector-specific research informing the efforts of tutors, trainers, and managers in health and fitness. The literature, however, does not appear to manifest any such direction, and instead reveals discord among researchers and scholars regarding the very validity of OJL itself.

Malek et al. (2002) investigated exercise science knowledge among a sample of 115 personal fitness trainers in the US, whose results in a purpose-built knowledge test were correlated with both years of experience and formal qualification levels. The results showed that years of experience had no significant effect on exercise science knowledge, whereas formal qualification levels did. If years of experience could be considered reflective of the amount of OJL undergone, or at least, room in which for it to occur, then OJL was not positively correlated with knowledge of exercise science. In his doctoral research, based on questionnaires obtained from 48 fitness professionals in the central Florida area on the other hand, Akerson (2014) found that years of experience was the most influential factor affecting financial income. These two particular studies illustrate how OJL can be both championed, as well as disparaged, by scholars in terms of its validity, efficacy, and function.

Determining the true validity of OJL in either case, however, is necessarily dependent on which of the two variables (exercise science knowledge or financial income) is to be considered the more desirable outcome for fitness professionals. The selection of relevant variable/s is challenging, precisely due to the “multifaceted” nature of the role of modern fitness professionals (De Lyon and Cushion, 2013, 1415), as well as an expected variance among individuals’ conceptualisations of what it means to be a competent or successful fitness professional (Rosado et al., 2014). Some of the additional desirable outcomes presented in the sector-specific literature include pedagogical/andragogical skills (Craig and Eickhoff-Shemek, 2009), transformation or transfer (of knowledge into practice) skills (Craig and Eickhoff-Shemek, 2009; Stacey et al., 2010), communication/interpersonal/relationship management skills (Maguire,

2001), and lifelong learning skills (Akerson, 2014). Without some agreement about the desirability of such outcomes, outcome-based research seeking to make claims about the validity of *any* form of learning in the field appears to be inherently problematic.

Indeed, the lack of a universal set of desirable learning outcomes that suitably exemplify the role of the modern fitness professional has been of primary influence on sector-specific research over the past two decades. Some of the prevalent themes in the sector-specific literature include: defining the precise role and scope of practice of fitness professionals (Maguire, 2001; Craig and Eickhoff-Shemek, 2009; Rosado et al., 2014); identifying the knowledge and competences that should suitably underpin the role (Maguire, 2001; Malek et al., 2002; Craig and Eickhoff-Shemek, 2009; Melton et al., 2010; Akerson, 2014); as well as the general efficacy and robustness of structures currently in place to regulate qualification and certification (Akerson, 2014; Rosado et al., 2014).

2.2.3 A process-based approach to on-the-job learning

While the validity of OJL is difficult to establish on the grounds of the attainment of specific, agreed, and desirable learning *outcomes*, some of the sector-specific research attention has instead been directed at its *process*. A systematic review of literature by Stacey et al. (2010) was undertaken to investigate where fitness professionals obtained their knowledge, and how they subsequently incorporated (or “translated”, or transferred) it into practice. Their review uncovered studies nominating common sources of information used by fitness professionals, but none exploring how such knowledge was actually translated into practice, showing a distinct paucity of sector-

specific research on the subtleties of OJL from a process-oriented perspective, given that OJL, according to Stacey et al., is typically characterised not only by knowledge acquisition in an abstract sense, but more importantly in an applied, practical, or *transferable* sense (even though this very statement betrays the sort of latent assumptions alluded to in chapter one).

De Lyon and Cushion (2013) provide a valuable clue at this juncture by attributing the paucity of research to a single main problem. Despite finding that OJL represented the majority of effective learning undergone by fitness professionals, they explicitly cautioned educators and trainers against purposively considering it as an on-going process, precisely due to its tendency to occur predominantly *tacitly*. Hidden learning, they contended, involves the risk of uncritical acceptance of existing practices that are potentially ineffective or unsafe (2013, 1413). This contention appears to rebuff outright the prospect of further scholarly efforts directed at deciphering what has already been established as the dominant form of learning by fitness professionals, following the cessation of their formal training and certification. So in other words, while OJL is the “most important way” (De Lyon and Cushion, 2013, 1413) fitness professionals learn, it would seem its process cannot be explored further, mainly due to the tacit-ness problem.

Whatever attention is directed at exploring the process of OJL must contend with the significant methodological challenges associated with studying a process that is not only often hidden, but yields outcomes that may also be hidden, or are at best questionable, due to the general lack of agreement about what learning outcomes

should underpin the role of the modern fitness professional. Further to Mason's assertion that informal learning is "intimately related" to job performance, and prevalent during everyday work activities (2002, 8), additional insights about the nature of OJL for fitness professionals, were not evident in the appropriated sector-specific research, rendering any deeper survey of its inherent thinking aspects specifically, even less likely, in this first body of literature.

2.2.4 Reflection as an influential factor

While acknowledging the tacit and theoretically enigmatic nature of OJL, relevant literature beyond the scope of exercise and fitness, yet still focused on practical and applied contexts, was sourced to help further facilitate a continuing exposition of the phenomenon. Di Stefano et al. (2014) presented a compelling piece of research differentiating between the "accumulation" of experience normally associated with passive, unconscious or implicit OJL on the one hand, and "articulation and codification" (2014, 3) of experience through conscious and explicit reflection on the other. Using a mixed methods approach combining laboratory and field experiments, they showed that where prior experience existed, additional time spent engaged in reflecting had a more positive effect on future performance than additional time spent engaged in doing. In other words, in the exercise and fitness context, hypothetically, if after having already delivered a given number of exercise sessions to clients, when faced with the choice of either delivering more, or instead reflecting on those already delivered, the PFT would be more likely to improve by choosing the latter (reflecting).

Through their onus on reflection, Di Stefano et al. (2014) essentially juxtaposed thinking and doing, bestowing comparable levels of importance on simply thinking about an on-the-job episode or situation on the one hand, and actually being engaged in it on the other. In terms of their contribution to the prevailing research aims in this study, apart from apportioning heightened relevance to the phenomenon of thinking in the context of OJL, Di Stefano et al. do not necessarily resolve the tacit-ness problem. Reflection has been defined elsewhere as a means of bringing inherent tacit knowledge “to the surface” (Raelin, 1996, 563), or as a tool for the transformation of “incidental” learning in the workplace (Marsick et al., 2006), implying a relatively simplistic view of a clean and direct transformation of knowledge from implicit to explicit forms. While showing how conscious/explicit learning is increased, however, Di Stefano et al. (2014) do not show how unconscious/implicit learning (along with its associated outcomes) is otherwise affected. In other words, while overall learning may be promoted, due to an increase in the quantity of explicit knowledge acquired, the amount of implicit knowledge also acquired is indeterminate, sustaining the unwanted risk of “uncritical acceptance of practices,” highlighted by De Lyon and Cushion (2013, 1413). So, if overall learning is increased, the possibility of the amount of unconscious/implicit learning (along with its associated outcomes) also increasing cannot be excluded. The problems associated with tacit learning (of which OJL is said to be predominantly constituted) are, therefore, not in fact reduced or addressed.

In short, while deliberative reflection may enhance *conscious/explicit* learning (Di Stefano et al., 2014), if OJL is predominantly constituted by *tacit* learning, then any additional factors influencing it such as any assumed form of non-deliberative or non-reflective thinking, remain largely unexplored, rendering thinking at this stage, a

problematic and poorly understood phenomenon. A second body of literature was therefore sourced in an attempt to explore this knowledge gap, using broader perspectives rooted in fundamental theories of learning and education.

2.3 Body two: Learning and education theory

2.3.1 Kolb's experiential learning theory

The process of on-going learning outside formal channels and in applied settings may be referred to in both scholarly and vernacular terms as learning “from experience”, which is credited in the education literature with constituting the majority of learning taking place in the workplace context, accounting for, according to Marsick et al., between 62% and 70% of what employees “need to know” (2006, 798). A seminal theory seeking to expound this very process (and by default any inherent thinking contained therein), is David Kolb's experiential learning theory (KELT). KELT has been credited as a key model underpinning the “catch-all phrase” of “experiential learning” in organisational contexts since the 1970s and 1980s (Cunningham, 1994, 134-135), of, according to Beard and Wilson, “extraordinary and far-reaching” scope (2015, 17). Additional models influenced by KELT, drawing on its fundamental tenets, have been similarly presented in the literature surrounding WBL, including Raelin's “Model of work-based learning” (Raelin, 1996), and Marsick and Watkins' “Informal and incidental learning model” (Marsick and Watkins, 1990), which present compatible and interchangeable depictions of the learning process. If learning from experience contains any thinking aspects at all, then key models seeking to expound it may also be similarly expected to expound the thinking aspects at least partially constituting it. This reasoning prompted a subsequent and thorough review of KELT and its theoretical underpinnings.

Kolb himself defined KELT as a “holistic model” (Kolb et al., 1999, 1) of learning, and a process whereby “knowledge is created,” through the, “*grasping and transforming of*

experience” (Kolb, 1984, 41). Grasping, according to Kolb, occurs either by undergoing a concrete experience, or abstractly conceptualising. The transformation of experience into new knowledge takes place either via reflective observation or active experimentation. In KELT, these four modalities are also arranged in a cyclical model illustrating how concrete experiences are followed by reflection and abstract conceptualisation, paving the way for active experimentation and the onset of new concrete experiences. Honey and Mumford (1992) presented their version of the learning cycle based on the same fundamental stages of having an experience (concrete experience), reviewing or reflecting on it (reflection), drawing conclusions, and planning for future experiences (abstract conceptualisation).

Among the four modalities, “reflective” observation and abstract “conceptualisation” are direct and explicit references to acts of thinking, supporting the position of KELT as a promising theoretical landscape from which to discern the nuances of thinking and its relationship with learning in the context of this study. Further to the juxtaposition and bestowal of comparable importance on thinking and doing by Di Stefano et al. (2014), closer evaluation of the two established modalities of both grasping (concrete experience and *abstract conceptualisation*) and transforming (active experimentation and *reflective observation*) in KELT also effectively places thinking and doing on an equal footing, substantiating the significance of thinking within the overall phenomenon of experiential learning. In other words, thinking about (or “conceptualising”) an episode is considered an equally valid means of grasping experience as actually being immersed in it (in a “concrete” way). Similarly, the two modalities of transforming experience into new knowledge also place thinking (or “reflecting”) on an equal footing with doing (or “actively experimenting”).

According to Marsick et al., learning models are created and informed by underlying theoretical perspectives (2017, 32). Kolb specifically references John Dewey (1859-1952), Kurt Lewin (1890-1947) and Jean Piaget (1896-1980) (Kolb 1984, 20; Kolb et al., 1999, 2) as underlying theoretical perspectives, and key contributing proponents influential to the development of KELT. Marsick et al. (2006, 795) similarly cited Dewey and Lewin as key sources upon which the Marsick and Watkins (1990) informal and incidental learning model was based, corroborating the importance of the theorists cited by Kolb. All three theorists have presented seminal works on the phenomenon of thinking. Given the apparent importance it awards to thinking, therefore, KELT (and by default the compatible models influenced by it) was subsequently reviewed through the veil of its theoretical underpinnings to further explore and more clearly define the thinking-based terms (abstract “conceptualising” and “reflective” observation) that essentially constitute half of the overall experiential learning process it seeks to expound.

2.3.2 Lewin’s action research and Dewey’s reflection

If the learning process is to occur truly *from experience* then the experience itself must necessarily be its fundamental constituent, and the “concrete experience” is thus afforded due importance and centrality in KELT. Indeed, in terms of modelling architecture, it is depicted in the KELT cycle as the uppermost central node initiating the learning process. This focus on hands-on “action” clearly shows the influence of Lewin (1952), who placed doing and experiencing at the heart of his “action research” process, often summarised as, “planning, executing, and fact-finding” (1952, 462-463).

The emphasis on doing and experimenting, followed by evaluating and updating, is evident in KELT, with execution encompassing the nodes of active experimentation and concrete experience, and fact-finding/planning encompassing the reflection and abstract conceptualisation nodes. With regard to the actual nature of these acts of thinking, Dewey (1910) presented further insight in his capacity as one of Kolb's three nominated proponents. His initial discourse on thinking opened with a discussion of its fleeting and random nature, and the seemingly unimportant topics and endeavours to which it often attends, characteristics which are, according to Dewey, inconsonant with the process of effective thinking and learning (1910, 1-14).

By diagnosing such flaws, Dewey essentially problematised the phenomenon of thinking, and proceeded with the task of prescribing means of improving its efficacy and usefulness, establishing a prominent and pervasive trend in subsequent literature. The thinking/reflecting process espoused by Dewey throughout his (1910) narrative posits that "suggestion" triggers the formulation of hypotheses and mental elaboration (theoretically consistent with undergoing a concrete experience, reflecting, and abstractly conceptualising), followed by hypothesis testing (experimentation). The themes of reflection, logic, "mental training", and the "scientific method" as theorised by Dewey are also clearly evident in more recent works on critical thinking and reflective practice, which are discussed later in this review in the third body dedicated to more specific literature on thinking and cognition. Also, his identification of reflection as a potential differential factor separating conscious from unconscious learning as later investigated by Di Stefano et al. (2014) further attests to the seminal nature of his work.

Overall, the experimental approach to learning as portrayed by Lewin (1952), combined with the importance of “observation” and the differentiated notions of “concrete” experience and “abstract” thinking presented by Dewey (1910), are consistent with the fundamental tenets of the KELT cycle. Apart from establishing the interchangeability of key terms and locating the acts of thinking they describe within a conceptual framework, this consistency however, does not necessarily assist in furthering our understanding of the essential nature of such acts, or in establishing robust definitions for the thinking terms cited in KELT. In his model of the WBL process, which draws heavily on KELT, Raelin provided some needed clarification in this regard, by defining *reflection* as the ability to “uncover and make explicit to oneself what one has planned, observed or achieved in practice” (1996, 567), and *conceptualisation* as a way of perceiving “standard problems in a new light”, giving learners a means of tackling “new and different problems in different contexts” (1996, 565). Closer evaluation of these definitions reveal a common and indeed crucial feature in KELT and similar models, as well as their theoretical underpinnings. Reflection and conceptualisation in the manner they are cited in KELT, and in Raelin’s model of WBL, are not so much defined as they are *predefined*. The Deweyesque tradition of problematising the phenomenon of thinking, combined with a general and natural desire to maximise the efficacy of the learning process, has led to the *teleological* tendency (Dewey, 1910; Lewin, 1952; Kolb, 1984; Watkins and Marsick, 1992) to model learning (and its inherent thinking aspects) as processes in terms of the purposes they have been designated to serve. In other words, it has led to a tendency to model learning in terms of what it *ideally* is, rather than what it *actually* is.

The term teleology is cited here, because modelling thinking and learning in terms of what it is ideally, implies the presumption of it being ideal for *something*, in this case desirable outcomes. Acts described therein are, therefore, defined by the outcome they have been included to serve. Aggregating acts of thinking into the various nodes of a given model, means that the terms used to describe such acts are defined more by their nodular relevance rather than by the essential nature of those acts themselves. The terms “fact-finding” (Lewin, 1952), “hypothesising”, “mentally elaborating” (Dewey, 1910), “observing”, “conceptualising” (Kolb, 1984), “reflecting” (Dewey, 1910; Kolb, 1984), “interpreting”, and “examining” (Marsick and Watkins, 1990), have been gleaned from procedural outcome-based models. They describe aggregated acts of thinking collated into terms that are not necessarily based on a rigorous understanding of the phenomenon of thinking, but instead on their assumed usefulness. Similarly, they do not yield insight into how professionals actually carry out such thinking acts in applied contexts, or if they even do at all. In search of a more robust definition of Kolb’s thinking-based terms, therefore, and motivated primarily by a disclosure of the actual nature of the thinking acts they describe, Kolb’s third nominated proponent (Kolb 1984, 20; Kolb et al., 1999, 2) was reviewed in the light of Piaget’s (1936) work on cognitive development.

2.3.3 Piaget’s cognitive development theory

Jean Piaget’s cognitive development theory (PCDT) primarily seeks to describe how cognitive development occurs in children, and depicts thinking as a continuous and adaptive process occurring in response to environmental input. Piaget (1936) proposed that abstract/generalised mental representations are the basic building blocks of

knowledge. In PCDT, all input from the external environment is processed, organised and interpreted according to these frameworks of mental representations Piaget termed “schemata”. During “assimilation”, environmental input is interpreted and processed via existing schemata. During “accommodation”, environmental input cannot be interpreted and processed via existing schemata, and a feeling of frustration prompts changes to the existing schemata. The process of “equilibration” governs the repeated interplay between accommodation and return to assimilation, ultimately resulting in on-going cognitive “adaptation”.

PCDT presents a compelling description of how thinking occurs, bearing some striking resemblances to Hans Selye’s general adaptation syndrome (GAS) theory of the same era. Selye (1950) proposed a description of the process of physiological responses by organisms to stressors in the environment. In GAS, the physiology of an organism remains unchanged where stressors from the environment are minimal. Where stressors of sufficient magnitude are imposed by the environment, metabolic and hormonal responses affect changes to the organism. The process of maintaining biochemical equilibrium or “homeostasis” governs or regulates metabolic and hormonal responses, ultimately resulting in on-going physiological “adaptation”.

PCDT and GAS both involve the active preservation of a homeostatic point via change to cognitive or physiological structures. Considering the seminal nature of GAS theory in the field of medical research (Szabo et al., 2012) from the physiological perspective, PCDT might be expected to exert comparable influence on domains rich in cognitive/thinking aspects, such as learning. Given Kolb’s assertion of Piaget’s

influence on the intellectual origins of his theory, KELT thereby represents a promising field in which to probe any distinctive traces of PCDT, thereby substantiating any prospective theoretical relevance or applicability it may hold in further understanding OJL.

Such traces, however, are not evident in the literature surrounding KELT. To the contrary, ensuing research on Kolb's learning style inventory (LSI) (Kolb et al., 1999, 11-12), actually diverges from PCDT in its use of terminology. The LSI categorises learners according to the various KELT modalities they favour, where "assimilators" are learners who favour the modalities of reflective observation and abstract conceptualisation, while "accommodators" favour active experimentation and immersion in concrete experiences. These semantics are not consistent with the notions of assimilation and accommodation presented by Piaget (1936).

2.3.4 Eraut's informal learning in the workplace and thinking in action

While KELT was sourced as a prospective theory in which to probe deeper insight about the nature of thinking acts in the context of OJL, a closer review has shown that robust definitions remain problematic to ascertain. Ambiguity in terminology, as noted in the theoretical relationship between KELT and PCDT, meanwhile constitute a key theme in the compelling work of Michael Eraut, who has presented a substantial body of research on informal learning in the workplace (Eraut 1995; 2000; 2002, cited in Eraut, 2004). He asserted that informal learning in the workplace had been thus far under-researched, and its complexity largely unacknowledged (2004, 256). As corroborated by Marsick et al. (2006), Melton et al. (2010), and De Lyon and Cushion

(2013), Eraut also posited that the majority of learning by professionals, technicians and managers predominantly comprises learning from experience or from other people, informally, and in a workplace setting (2004, 248). In one of his later, and particularly comprehensive works, Eraut (2004) set out to explore the theoretical frameworks underpinning informal learning in the workplace, and “deconstruct” some of its key concepts (2004, 247), including those presented in KELT. In view of the inconsistencies revealed in the theoretical foundations of KELT in the context of this study, Eraut’s work was reviewed in search of clarification and further insight.

According to Eraut, KELT does not, for instance, clearly define an observation as either an idea, or a process of visual sensory reception. He similarly argues that Kolb's cycle does not clearly define experience as a single episode, or as the accumulated learning resulting from a series of episodes, thereby challenging the very foundations of KELT itself, through its use of the term “experience”. While a review of Kolb’s work does not resolve this latter question specifically, use of the term “experience” was in fact discussed by Kolb (1984; 1999). In Kolb et al. (1999, 2), the authors use the term to differentiate KELT in its conceptualisation of learning from theories rooted in the cognitive or behaviorist traditions, by emphasising its subjective nature as a human experience. In other words, instead of conceptualising learning in terms of uniform, operationalised and descriptive models of internal processes as cognitivists might, or purely in context of the measurable outcomes it yields as would behaviourists, Kolb, through the use of the term “experience” or “experiential”, acknowledges that learning has a distinctly personal and subjective nature.

To further clarify the influence of the behaviourist and cognitivist paradigms, throughout his narrative on thinking as a learned skill, Greeno (1997) cites three paradigmatic perspectives informing insights in educational psychology on thinking as a process, namely *behaviourist* (associationist), *cognitivist* (domain-structural), and *situative*. The situative perspective emphasises “participation in practices of inquiry, sense-making of communities, and development of individual identities as thinkers and learners” (1997, 87). With respect to the latter perspective, Brown (1988) similarly asserted that knowledge is “inextricably *situated* in the physical and social context of its acquisition”, and cannot be “extracted” without being “irretrievably transformed” (1988, 6). Thinking is determined, according to the situative perspective, by sustained participation in communities of practice. This perspective, according to Greeno, constitutes a framework that *includes* behaviourism and cognitivism, gesturing towards the holistic and encompassing nature of perspectives emphasising the personal subjectivity involved in individual sense-making and development of individual identities within wider communities. In light of its focus on action, sense-making, and subjectivity, KELT appears increasingly theoretically aligned with Greeno’s (1997) *situative* perspective, establishing a theoretical link between experiential learning and situated learning. Liou further emphasised the subjective nature of learning by defining it as “qualitative change” in learners, further suggesting that personal experience is precisely what makes learning significant to learners as subjects (2018, 77).

In a landscape where OJL is considered prevalent (Eraut, 2004; Marsick et al., 2006; Melton et al., 2010; De Lyon and Cushion, 2013), yet under-researched and poorly understood (Eraut, 2004), Kolb et al. (1999, 2), in clarifying their use of the term *experiential*, thereby assumed a promising philosophical position uniquely poised to

uncover some its fundamental essential qualities, including its thinking-based aspects. This line of enquiry however, was not a subsequent focus in KELT research, which was instead, as argued previously, primarily directed at the development and validation of the LSI (Kolb et al., 1999, 11-12). Kolb proceeded with the development of a generally prescriptive (even diagnostic) approach, as opposed to a more descriptive one. Indeed, the aforementioned “promising” position from which later works on KELT diverge can only be deemed promising if the prevailing aim is precisely a disclosure of what learning (including its thinking aspects) actually is, rather than what it potentially should or could be, and not the diagnosis or categorisation of learners according to distinctive learning styles.

If the principal aim is to first seek a more rigorous understanding of learning (and its thinking aspects) before objectifying or operationalising it as a process, then the LSI and indeed the entire quadripartite structure of the KELT learning cycle itself, present an additional problem, the resolution of which engenders a return to the clarifying insights offered by Eraut (2004). According to Kolb et al. (1999, 3), learners “continually choose” between the four KELT modalities, and possess predispositions to favour certain modalities over others. The claim that learners not only have a choice about what approach to use, but are actually “continually” engaged in this act of choosing suggests the existence of an entirely additional layer of cognitive activity that must be preceding execution of any of the four modalities that constitute the KELT cycle. By later stating that both past experience and present environment are factors influential to the development of a “preferred way” of choosing, Kolb et al. (1999, 3) allude to the prospective nature of such a layer, but do not elaborate further. Closer evaluation of KELT therefore endows yet further importance on the need to first

achieve a deeper and clearer understanding of the thinking aspects of learning, before attempting to operationalise thinking and learning processes.

At this juncture, Eraut (2004, 248) affords thinking commensurate importance by specifically citing the determination of how people think “in action” as an additional cogent focus guiding his research. Eraut nominated “intention” as the primary factor determining his own typology of informal learning in the workplace (Eraut, 2000, cited in Eraut, 2004, 250), which is organised according to learning that is, “implicit, reactive, or deliberative”. The typology essentially differentiates learning that is unintended, tacit, and autonomous where time is limited, from that which is intended, explicit, and conscious where sufficient time permits. By conceptualising informal learning in the workplace in the context of time-constrained episodes, Eraut essentially elucidates and prioritises the *thinking in-action* that must be taking place therein. Examples of quick-thinking associated with the autonomous and unintended end of the typology’s implied spectrum include accessing memories like a “series of film clips”, or the use of mental “pictures” of children by teachers to inform quick classroom decisions (Eraut, 2004, 254). These latter descriptions gleaned from the accounts of participants in Eraut’s research are fascinating inasmuch as they allude to the “distinctly personal and subjective nature” already ascribed to the process of learning from experience by Kolb et al. (1999, 2).

Continuing his evaluation of thinking in action, Eraut developed an additional five-stage model to account for transfer of knowledge (from education to workplace settings), based on the extraction and re-situating of knowledge, according to its

relevance in particular situations (2004, 256). Eraut's evaluation of this model, however, impelled his own subsequent admission that tacit knowledge acquisition and application must be even more complex than was previously thought. Conceptualising learning and its thinking aspects in terms of procedural models engenders the requirement for substantial additional cognitive loads in both Kolb and Eraut's conceptualisations of experiential learning in the workplace, that are challenging to theoretically accommodate within the constraints of objectified nodes inside models attempting to represent, what has ultimately already been acknowledged by Eraut, as a complex and poorly understood phenomenon. According to Marsick et al., "models can attempt to conceptualise the dynamic complexity of learning" on various "planes" that may not "adequately capture what learning is and how it emerges from within the relationships within the system over time" (2017, 32), effectively revealing the limitations of procedural models in explicating the true essential nature of learning.

2.3.5 Thinking in action as antecedent to learning

Nevertheless, Eraut provides valuable guidance at this juncture. By framing learning episodes in time-bound, situational, and essentially task-based contexts, Eraut (2004, 247) reveals a compelling and insightful observation concerning the structured and unstructured nature of "work", and provides an important clue in the on-going effort to discern thinking in action. Work is generally a term used to describe tasks and actions in various settings including those associated with the workplace or classroom. When we refer to structured and unstructured learning as we often do when conceptualising the process in terms of the formal/informal dialectic (Tissot, 2004), it is actually the

work, according to Eraut, that was either structured or unstructured, with learning simply being either an intended or unintended outcome.

By establishing learning as an outcome of work, the latter phenomenon is presented by Eraut as primary and causal. From this particular viewpoint, if thinking is considered central to the performance of work, further to Greeno's (1997) *situative* participation-based perspective for conceptualising thinking in educational psychology, then learning can be equivalently conceptualised as resulting from work-based (on-the-job) thinking. In other words, the explicit and implicit thinking occurring during the performance of work, is primary and causal to any resulting, intended or unintended, changes to existing knowledge. The nature of thinking in action is thus apportioned additional significance as a research focus by Eraut, despite its current status as being largely unexplored as a phenomenon.

Any exposition of the essential nature of thinking, or suppositions concerning its relationship with the wider phenomenon of (predominantly tacit) OJL for that matter, must take into account the known tacit-ness problem (Eraut 2004, De Lyon and Cushion, 2013; Di Stefano et al., 2014) that has riddled its further investigation. Eraut further qualifies the tacit-ness problem in his articulation of a paradox, whereby professionals are able to, “refer to codified, scientific knowledge in clear explicit terms, yet use that knowledge in ways that are largely tacit” (2004, 256). The necessary underlying processes needed to use that knowledge, just like the processes involved in continuously choosing learning modalities and styles (Kolb et al., 1999, 2), appear to constitute a substantial load of tacit cognitive activity that render the phenomenon of

on-the-job thinking in action even more complex than previously thought (Eraut, 2004, 256), and in pressing need of clarification. An important reduction is hereby made from the problem of tacit *learning*, to the more specific problem of tacit *thinking*.

Throughout the ensuing narrative and subsequent review of a third body of literature, therefore, the thinking integral to the performance of work as a focus was reduced from the wider phenomenon of OJL, and considered antecedent to resulting changes in knowledge (learning). In the tradition of Eraut, therefore, who originally set out to “disclose” the different “phenomena” (2004, 247) embraced by the terms used in the education literature, in an effort to further explore thinking more specifically, a third body of literature based on pure thinking and cognition theory was sourced.

2.4 Body three: Thinking and cognition theory

Literature searches for what eventually constituted a third body were carried out in August 2016 using EBSCOHost via the University of Lincoln library. To obtain an overall picture of prevalent academic and professional interest in thinking at large, the straightforward keyword “*thinking*” was used. This generated results most relevant to OJL in the context of this study converging on four main areas; mindfulness, critical thinking, creative thinking (including lateral thinking) and reflective thinking (or “reflective practice”). The grounds upon which such areas were deemed relevant are discussed further throughout the following sections.

2.4.1 Mindfulness, critical thinking, and lateral thinking

Definitions of mindfulness typically agree that it involves an ability to attend to the present moment without judgement or emotional interference (Goldberg et al., 2014, 491). For those seeking to maximise effective learning input, the potential benefits of such an approach are compelling, and theoretical links between mindfulness and learning have, indeed, already been established. “Socio-cognitive” mindfulness was defined by Kolb and Yeganeh (2009, 8) as a state of heightened contextual and situational awareness, as contrasted with mindlessness, characterised by lowered awareness and autonomy of actions. It has been credited with enhancing “contextual learning”, and in states of heightened awareness, mindful thinkers are theorised to employ broader sets of “cognitive categories” (2009, 9). Using broader categories of mental representations while interpreting input from the environment, mindful thinkers, according to Kolb and Yeganeh, are less likely to subscribe to the inaccurate or

incorrect judgements which would otherwise result from the use of fewer or narrower categories.

A reduction in biased judgements is akin to the sort of cognitive filter described by Wallace and Jefferson in their definition of critical thinking as “consciously quality controlled thinking” (2013, 248). While critical thinking has garnered substantial research interest as evidenced by literature searches, precise definitions of the term vary. According to Moon (2008), “critical thinking” typically describes the use of a methodical approach to thinking that is also evaluative, directed, purposeful, and evidence-based. It may also be described as “convergent” (Guilford, 1967) in nature, ultimately intended to narrow-down breadth of input, and arrive at accuracy or truth.

A survey of the research interests uncovered by the search term “thinking” promptly mirrored a trend noted in the previous two bodies of literature, namely the conceptualisation of thinking in terms of how people potentially should, or could, think in terms of some assumed outcome, rather than the way they actually do. The approach is tempting, because a prospective ‘think to learn’ model based on the definition of learning as “grasping and transforming” of experience (Kolb, 1984), or more succinctly as “input-output” (Eraut, 2004, 257), could coherently accommodate mindfulness and critical thinking, since both serve the purpose of maximising *grasping* or *input*.

“Divergent” (Guilford, 1967) thinking styles may similarly constitute theoretically valid constituents of a general ‘think to learn’ model in the *transforming* or *output* phase.

“Lateral thinking” for instance, is a popular method of creative thinking intended to

uncover the multiple possibilities of what might or could be (De Bono, 1990). The thinking tools and techniques associated with all three systems (Mindfulness, critical thinking and lateral thinking) could also be integrated with the stages of Kolb's (1984) learning cycle, theoretically embellishing it with convergent thinking tools in the reflective observation phase, and divergent thinking tools in the abstract conceptualisation phase. In the previous section, however, it was argued that a more rigorous understanding of thinking should precede objectifying or operationalising it as nodes of a learning model. From this perspective, such a 'think to learn' model would still reside on tenuous theoretical foundations, and pending testing and validation in the field, would also remain of questionable scope. Indeed, the general relevance of models and tools is discussed in greater depth later (in section 2.4.3). Any discussion of the results returned by a generic literature search based on the term *thinking* meanwhile, would not be complete without a specific review of reflective thinking or *reflective practice*, and in particular, the influential work of Donald Schön (1930-1997), to whom the popular term reflecting "in action" is typically attributed.

2.4.2 Reflective thinking

Schön (1983) observed professionals at work in a range of contexts, including architectural design, management, psychotherapy, and (improvised) musical performance. These work-based contexts, according to Schön, require thinking processes with a distinctive problem-solving characteristic. The professionals under Schön's observation revealed a form of intuitive knowledge through their spontaneous problem-solving actions and judgements, which he termed, "knowing in action". This knowledge was typically readily available for use during novel unfolding situations,

even if professionals were unaware of how they acquired it, exhibiting the thinking process Eraut (2004, 256) articulated in his paradox, discussed previously (in section 2.3.5), and corroborating the existence of the sort of affective tacit cognitive activity also discussed previously (in sections 2.3.4 and 2.3.5). During action, according to Schön, professionals are able to note and reflect on such previously tacit thoughts, as and when they arise. Tacit knowledge is presented by Schön, in this sense, not as problematic, but rather as a natural, and indeed desirable, commodity, one that could, and should, be enriched by reflecting both during (in) the action itself, or after (on) the action in a more deliberative fashion. Schön likened the process of problem-driven thinking *in* action, to application of the “scientific method” (Dewey 1910). Just as a scientist might apply the scientific method in a more theoretical sense, the modern problem-solving professional would apply it in a practical sense in the workplace, as “research in practice”. Reflecting in action enables the construction of new theories, which are subjected to immediate testing in a form of “active experimentation” (Kolb, 1984).

After the cessation of action, retrospective and evaluative reflection may subsequently be carried out, considering context and outcome. This latter form of reflecting *on* action serves to actively update existing knowledge, tacit or otherwise, shaping new approaches for use in future situations. The application of both forms of reflection *in* and *on* the important and central role of action by a professional, according to Schön, would eventually lead to their development as a “reflective practitioner”. Should thinking be carried out persistently in the absence of action on the other hand, Schön recognised the danger of becoming locked in an infinite loop of ineffective reflection,

ultimately portraying reflection as a process applicable by professionals with various degrees of efficacy.

A shift from the initial exploratory and descriptive approach in Schön's work to the development of a more prescriptive and operational method of reflective practice again mirrors the general impetus noted in the literature towards the development of efficacy-enhancing models and tools. The prospect of becoming an effective reflective practitioner as opposed to an ineffective one, as highlighted by Schön, constitutes a form of self-evident justification for the shift. The initial orientation of his work, combined with the position established by Kolb et al. (1999, 2) in their assertion that learning has a distinctly personal and subjective nature, provides an important methodological clue for a further non-teleological exploration of the nature of on-the-job thinking in the context of this study. Schön's influence, however, as evidenced by the later volume of work in which he is frequently cited, is instead largely characterised by a substantial body of research on reflective practice as a method or skill, and associated reflection tools. Just as research on KELT proceeded with the LSI as its primary focus, research inspired by Schön similarly diverges from an initial promising position (in the context of the aims of this study), in favour of the development of models and tools.

2.4.3 Thinking and reflecting tools

In a precursor to Eraut's (2004) thinking in-action model discussed previously, Griffiths and Tann (1991) posited a temporally-defined five-stage model of reflective practice, adding more scholarly credence to Schön's influential notion of becoming a *reflective*

practitioner. Their model was based on rapid reaction, repair, review, research, and reformulation, spanning a continuum of instinctive and immediate thinking on the initial end, and more deliberative, abstract and systematic thinking on the concluding end. The model provides individuals intent on maximising their learning, with a systematic guide to becoming more effective reflective practitioners. Reflection tools like those famously presented by Borton (1970) and Gibbs (1988), additionally serve to shape, guide and ultimately improve the more deliberative aspects of reflecting as presented by Schön (1983) and Griffiths and Tann (1991), typically through the use of such strategically selected self-directed questions as, “What sense can you make of the situation?” and, “If it happened again, what would you do differently?” In his comprehensive work on language and its development in children, Vygotsky affirmed the value of inner speech characteristic of such models, by portraying it as a means of reconsolidating thoughts. According to Vygotsky, thoughts are “*completed* in the word” (1987, 252), rendering guided inner speech a suitable means for enhancing thinking processes. Again, such self-directed questions, could from a modelling perspective, be merged with any or all of the thinking tools discussed so far, and a general ‘think to learn’ model augmented with relevant self-questions at each stage be constructed to guide professionals engaged in on-the-job episodes through the processes of mindful, critical, lateral, and reflective thinking, encompassing all the main areas uncovered by generic literature searches based on the term *thinking*.

In section 2.4.1, it was argued that such a ‘think to learn’ model would reside on tenuous theoretical foundations, and pending testing and validation in the field, would remain of questionable scope. Indeed, Cromley challenged the scope of thinking tools in the context of learning, on the grounds of their generic nature, by designating

thinking as a “field-specific skill, with poor transference to multiple subject areas” (2000, 17). If a job role, such as that of PFTs, is “multifaceted” (De Lyon and Cushion, 2013, 1415), then thinking tools must accommodate a multiplicity of situations and episodes (akin to multiple subject areas) in which professionals are required to think. The problem of having to discern the mechanisms by which knowledge/theories must ‘cross the bridge’, or be made *transferable*, to practice, as cited in chapter one (section 1.2), is revealed here, corroborated by Eraut’s acknowledgement of the considerable complexity involved in the “extraction and re-situating of knowledge, according to its relevance in particular situations” (2004, 256). Brown similarly challenged the notion of “abstracting” knowledge with a view to transferring it to alternative contexts as an “impoverished and misleading view of knowledge”, maintaining that knowing is instead “inextricably situated” in the “physical and social contexts” in which it is acquired (1988, 6).

Research in health care, nursing and midwifery (Ekebergh, 2007; Sian Nicol and Dosser, 2016), and education (Noormohammadi, 2014), has attempted to explore the use of generic thinking/reflecting models and tools for fostering continuing learning and professional development in practical workplace contexts. Ascertaining the applicability and efficacy of such models in practice, however, has been an inconclusive undertaking thus far. While professionals have been shown to develop deeper insights about their own practice through the use of reflection tools, empirical evidence confirming any additional favourable outcomes has been indeterminate (Staniforth and Harland, 2006; Noormohammadi, 2014). Like nurses, midwives, and other health care professionals, PFTs are engaged in “service work”, classified as

“emotional labour” (Maguire, 2001, 380), making research in the field particularly interesting in the context of health and fitness.

The usefulness of existing reflection tools, therefore, cannot currently be substantiated without further research into their efficacy in terms of measurable outcomes (Mann, et al., 2004; Bell and Mladenovic, 2013). While Di Stefano et al. (2014) showed that a simple form of general reflection had a role in maximising learning in a battery of laboratory and field-based tests, it did not specifically test any known reflection tool. So, while creating or augmenting models and tools might at face value appear to be a worthy scholarly pursuit, such models and tools would still exist in the scope of theory, and lack relevance pending validation and proof of their efficacy in practice. Indeed, any additional theoretical complexity or levels of abstraction applied to such models and tools by theorists would only further compound prospective efforts towards their validation. Furthermore, as shown in the previous review of exercise and fitness sector-specific literature, validation would also necessarily depend on the existence of an agreed set of desirable outcomes relevant to the specific contexts in which their application is intended. As argued previously (in section 2.2.2), agreement on a universal set of such outcomes in the health and fitness sector, has yet to be ascertained.

At this juncture the appropriation of literature was guided by the pursuit of a more robust and descriptive understanding of the phenomenon of thinking (in the context of OJL), that was not rooted in the tradition of creating or augmenting models and tools. In his attempts to “disclose” the phenomenon of “thinking in action”, Eraut (2004) evoked known theory on procedural and declarative memory (Tulving, 1972),

providing another important clue for the sourcing of additional literature. With respect to the similarly promising insights provided by Piaget (1936) and PCDT in discerning the intellectual origins informing the thinking aspects of KELT (Kolb 1984, 20; Kolb et al., 1999, 2), a review of pure cognition theory, rooted in the cognitivist as opposed to behaviourist paradigm in educational psychology terms, was undertaken in continuing pursuit of a deeper understanding of the essential nature of thinking. Cromley (2000) provided additional support for a review of the cognitivist approach at this stage, by asserting its suitability as a basis for education and learning theory, and beneficence in guiding the efforts of educators and trainers intent on maximising/enhancing learning.

2.4.4 Cognitive theories of memory

The specialised science of cognition (cognitive science), is based on the primary assumptions that mental representations and processes do exist, and can be studied. *Behavioural*, as opposed to *cognitive*, science as a dominant paradigm had represented an excessive shift of emphasis in the study of thinking, onto observable and relatively superficial evidence, and away from the deeper underlying principles and abstract mental structures underlying it (Chomsky, 2006, 57). According to Kretchmar (2013), the cognitivist approach duly emerged from a growing dissatisfaction with the limitations associated with behaviourist explanations of the more complex aspects of human thought, which tended to be based primarily on the basic notion of stimulus-response. The general field of *cognitive science* has grown to encompass approaches from various academic and scientific disciplines including cognitive psychology, neuroscience, linguistics, and computer science (information processing and artificial

intelligence), tackling such areas of interest as attention, perception, memory, language comprehension, and problem-solving (Haberlandt, 1997; Ashcraft, 2001).

Mental representations refer to concepts, ideas, and information that are stored in the mind as long-term memory, and further categorised according to “procedural” and “declarative” knowledge (Tulving, 1972). *Processes* refer to the ways in which mental representations are stored and retrieved by the mind during interactions with the environment, and are typically attributed to the operations of (short-term) “working memory” (Baddeley, 1990).

Tulving (1972) suggested that (long-term) *procedural* memory records “condition-action pairings” responsible for guiding the performance of routinised skills and sequences. He subdivided the storage of *declarative* knowledge into “semantic” and “episodic” memory. Semantic memory is defined as a record of perceptions and thoughts, and is primarily symbolic in nature. Episodic memory is defined as a record of one’s experiences, and is primarily sensory in nature.

In terms of mental processes, the influence of computer science on cognition theory is evident in Baddeley’s (1990) work on what he termed the “multi-component” model of (short-term) working memory. He theorised that the working memory system was structured around a “central executive” serving a similar function to a computer processor, in conjunction with such additional periphery or “slave” components as the “phonological loop” and “visuospatial sketchpad”, responsible for language comprehension and the manipulation of visual and spatial information respectively.

The multi-component model of working memory would constitute and support a majority of the on-going cognitive activities undergone in applied settings, largely accounting for such processes as perception, memory, language comprehension and problem-solving. Of particular significance to education theorists, the models presented by Tulving (1972) and Baddeley (1990) also collectively appear to present an overall architecture of structures useful for explaining pathways of knowledge acquisition (learning). The “multi-stage” model of sensorimotor learning presented by Fitts and Posner (1967) for instance, may be conceptualised and explained using the theory of memory (Tulving, 1972; Baddeley, 1990).

The multi-component model of sensorimotor learning (Fitts and Posner, 1967) is based on the progression of learners through cognitive, associative, and autonomous stages. Autonomous procedural knowledge represents the principal desirable outcome of the model, depicting tacit knowledge as the highest stage of learning, applicable in the case of skills like, for instance, riding a bike. Using a Tulving (1972) and Baddeley (1990) collective framework of memory to explain the Fitts and Posner (1967) approach to learning how to ride a bike, the central executive would initially recruit the visuospatial sketchpad in the execution of deliberate efforts to perform specialised actions during the *cognitive phase*. Somebody learning to ride a bike would deliberately “think their way through” the performance of the required movements during this stage, like actively keeping the handle bars straight, and applying downward pressure with each foot on the respective pedals at the right moments to produce forward motion. Familiar aspects of the action already stored in procedural memory would then need to work in concert with the visuospatial sketchpad in rehearsing and fine-tuning actions during the

associative phase, consolidating and reinforcing relevant neural pathways. A bicycle rider during this stage would not need to think about the action of pedalling for instance, and could focus instead on honing balance and maintaining overall direction. Following sufficient rehearsal, performance of the action would be possible via procedural memory alone, without occupation of the precious and limited resources of the central executive, resulting in the desired autonomy of action during the *autonomous phase*. A bicycle rider during this phase would be able to ride quite safely while thinking about something else entirely.

While learning via the Fitts and Posner (1967) multi-stage model can be systematically explained using theorised memory structures, it is directed at sensorimotor learning and skill acquisition, rather than abstract/symbolic non-sensory learning. Attempts by scholars to explain the more complex process of knowledge acquisition and retrieval in the specific context of OJL using the same memory structures, have been less successful. Eraut suggested that long-term and working memory fail to account for tacit knowledge acquisition and retrieval in a way that satisfactorily resolves his paradox (2004, 256) regarding the largely tacit use of otherwise codified and explicit knowledge, and the tendency for overall efficacy and competence to actually be determined by such implicit processing. Furthermore, procedural knowledge does not account for the nuances of various distinctive types of knowledge, such as intuitively understanding a complex unfolding workplace situation as opposed to say, riding a bike. Logie similarly argued that the central executive is a “conceptual ragbag” or “placeholder” (2016, 2094) used to conveniently accommodate a complex range of cognitive functions and processes that are otherwise difficult to understand or explain, effectively undermining its relevance in explaining the thinking aspects of OJL. Indeed,

a common critique of both working and long-term memory models maintains that they are of excessively abstract and conceptual nature, and poorly correlated with actual physiological processes in the brain during the onset of thinking acts they seek to explain. Neuroscience has, in fact, identified multiple regions of the brain to be in operation during the various activities associated with distinctive components of the traditional models of memory (Cromley, 2000, 74).

2.4.5 Dual-process theories of thinking

Exacerbating the considerable challenge of understanding knowledge acquisition and retrieval in context, Reber (1989) made additional observations in his study of “implicit memory” to yet further compound the tacit-ness problem. Reber’s subjects were able to acquire abstract knowledge of the structure of their environment unconsciously, and, indeed, do so more efficiently than via conscious deliberative efforts to acquire that same knowledge. This knowledge could in turn be retrieved and applied entirely implicitly to solve problems and make decisions, corroborating Eraut’s paradox (2004, 256) which implied that the overall efficacy and competence of professionals was actually predominantly dependent on implicit, rather than explicit, processing. Raelin similarly referred to the predominance of implicit functioning as a foundation for learning from experience, and its propensity in workplace contexts to “make reasonable decisions about novel situations” (1996, 563). Marsick et al. also drew close parallels between implicit and *incidental* learning (2006, 796) in their model of WBL. Additional studies in the field of unconscious cognition have further suggested that while acquisition and retrieval via *explicit* memory was adversely affected by age and drug-

induced amnesia, *implicit* memory was not (Haberlandt, 1997, 261), further affirming an emerging suppositious pre-eminence of tacit thinking.

A profound example of unconscious cognition and its perplexing nature is epitomised by the phenomenon of blind sight. Weiskrantz (2002) first showed in 1986 that a visually blind patient was somehow able to negotiate physical obstacles in his path without being able to see or otherwise consciously perceive them, while exhibiting some of the same neural brain activity as fully-sighted subjects. Over a decade following his original study, Weiskrantz reported that the same patient had also developed the ability to experience and describe conscious “after images” (2002, 568) resulting from stimuli received entirely unconsciously. After images are defined in the case of fully-sighted individuals as those images that continue to appear in vision, even after exposure to the original image has ended. Research in cognitive science has therefore corroborated an increasingly mysterious and poorly understood dimension to tacit thinking, exacerbating scholarly attempts to discern its fundamental nature. Marsick et al. stated that the “controversy” surrounding the nature and existence of implicit learning is, “not likely to be resolved soon” (2006, 798).

While appearing increasingly problematic, the notion of entirely unconscious cognition, by its very nature, elucidates the dualistic theoretical position from which it, as well as the term *tacit learning* itself, fundamentally arise. The differentiation of dialectically opposed unconscious and conscious conceptualisations of cognition is rooted in “dual process” theories of thinking. Some of the terms used to characterise “type one” thinking include unconscious, fast, implicit, automatic, and intuitive. This type of

thinking is considered to bypass working memory and exclusively employ long-term memory. Terms used to characterise “type two” thinking conversely include conscious, slow, explicit, controlled, and reflective. This type of thinking employs a concerted interplay between the long-term and working memory systems, and is thought to be more common in humans than in animals (Evans and Stanovich, 2013), correlating it with later evolutionary development of the brain (Rakic, 2004).

In the context of learning, the existence of types of thinking that are hidden, automatic, and uncontrolled, as implied by dual process theories, is understandably problematic, since the learning process is traditionally something stakeholders including educators, trainers, and learners themselves would prefer to direct at desirable outcomes. Given that OJL happens to occur in environments that are typically not structured with learning in mind (Eraut, 2004), the type one thinking that predominates therein (Eraut, 2004; De Lyon and Cushion, 2013), renders it a spectre of which stakeholders and researchers are ultimately cautious. Indeed, De Lyon and Cushion (2013) actively cautioned educators and trainers against purposively privileging OJL as an on-going process, precisely due to the tendency of the tacit cognitive processing predominating therein to occur “uncritically” (Eraut, 2004, 253; De Lyon and Cushion, 2013, 1413). The categorical dualistic perspective, therefore, does not appear to support the development of further understanding of thinking in the context of OJL, or even the advocacy of further research in the area. Just as tacit thinking was reduced from the wider phenomenon of tacit learning, at this stage, a further reduction to the problematic role of consciousness (or unconsciousness) has led to another impasse in the context of cognitive science approaches to understanding the phenomenon of thinking.

2.4.6 Single-system theories of thinking

Further to the necessity to “continuously choose” between the KELT modalities highlighted by Kolb et al. (1999, 3), the existence of two distinctive thinking systems similarly predicates the necessity for some deeper aspect of any such thinking system to “choose” between the two at any given time, leading to the additional problem of having to further understand the mechanisms and processes governing this selection. Baddeley (1990) suggested that the selection might be dependent on a natural tendency towards unconscious cognition in order to free-up (conscious) working memory, while Eraut (2004) suggested the selection was dependent on the availability of time. While both views explain how various types of thinking might be prioritised, they ultimately depict any prospective mechanisms governing the choice between thinking types or learning modalities as increasingly tacit in nature, further augmenting the sheer volume of unconscious cognition that must be taking place at any given time. *Conscious* cognition is thereby relegated to a position whereby its evocation is essentially determined by an increasingly dominant yet poorly understood unconscious cognition system. Raelin posits implicit learning as the “base for conscious operation” (1997, 566). Cognitive science, must account, therefore, for the mechanisms constituted by such a base that determine interplay between the two types of thinking, if it is to be truly explanatory or predictive as a valid scientific discipline.

Logie (2016) challenged the implications of established cognition theory by criticising the notion of a central executive controlling working memory like a computer processor, raising the question about what in turn might be controlling the central executive. This reasoning promptly results in what Dennett and Kinsbourne described as an “infinite regress”, where the brain is portrayed as a “Cartesian theatre”,

somewhere inside which a conscious homunculus (small person) must reside, constituting the ultimate perceiver and decision-maker (1992, 185). William James (1842-1910) referred to a similar notion in his “psychologist’s fallacy”, where a psychologist stands outside the mental state she observes. When she sees a thought she actually sees the thought itself as an object, plus the object itself (James, 2017, 180). Of course the viewpoint of the psychologist, in its disconnection from the thought itself, and, inclusive of a realisation that one is now thinking of an observer of thoughts, promptly and similarly, becomes an infinite regress.

In an attempt to deconstruct some of the problematic implications of established cognition theory, Osman (2004) later argued in favour of a unified single-system framework for expounding complex human reasoning, and against its fragmentation. She stated that in any case, the fragmentary approach would actually have to yield more than just two systems as implied by dual-process theories, and that a single framework defined by the “graded” properties of relevant representations and levels of conscious awareness, was more useful in furthering our understanding of the complex nature of thinking. Evans and Stanovich (2013, 230) acknowledged this critique, and confirmed that the types and conditions differentiating type one and two thinking respectively need not necessarily be dialectically opposed, and may be conceptualised as occurring along a continuum, thus gesturing to a more holistic account of the phenomenon of thinking.

In his commentary on the formal-informal learning dialectic imbued in the education literature meanwhile, Eraut (2004, 250) indicated his disapproval of dichotomies as

indicators of “lazy thinking”, essentially supporting an appraisal of pre-eminent approaches in theorising thinking and learning, and a deconstruction of the polarised concepts pervading them. Tulving (1972, 381) also critiqued the dominant approaches in cognitive science, specifically, by stating that the numerous terms used in the literature to describe various conceptualisations of memory types had led to ambiguity, itself a sign of an “immature science”. Noting these critiques, in order to avoid an exploration of the thinking aspects of (predominantly tacit) OJL amounting to little more than an “immature science”, therefore, it may become necessary to argue in favour of a more holistic (non-fragmented) account of thinking that is not rooted in dichotomies.

To this effect, the existence of distinctive thinking systems has also been challenged from an evolutionary perspective by Carruthers (2014). The complex thinking capabilities we categorise as *system two* are typically associated with the neocortical structures of the brain, which are considered later evolutionary developments in humans (Rakic, 2009). Carruthers (2014) argued in favour of an apparently more plausible proposition, that the processes associated with what we now conceptualise as *type one* thinking, simply evolved in complexity to facilitate the capabilities we now (unnecessarily) associate with an entirely separate (*type two*) system. A comprehensive non-fragmented single-system framework, as espoused by Osman (2004), could therefore consist of graded properties occurring along a continuum (Evans and Stanovich, 2013), with consciousness itself representing one such graded property.

Further to Logie's (2004) criticism of the notion of a central executive, Dennett and Kinsbourne (1992) used a theatre analogy to argue against the existence of an ultimate and central perceiving/decision-making entity in the brain. In "Global workspace" theory (Baars and Franklin, 2007), the theatre analogy is again used to conceptualise thinking in a difference configuration altogether. It depicts the audience, actors, stagehands, and numerous other technicians, as abundant on-going unconscious cognitive processes, with consciousness being akin to the spotlight, illuminating only a narrow field of consciously perceived experience. According to Baars and Franklin, their thesis is supported by research on electrical brain activity revealing synchronous oscillatory EEG (electroencephalography) frequencies in various areas of the brain corresponding with specific perceptual experiences of which a subject is conscious (2007, 960). Global workspace theory ultimately seeks to uncover the role of consciousness itself within a less problematic conceptualisation of thinking as a single holistic system.

In her research on reflection in the nursing sector, Ekebergh (2007) also argued in favour of a more holistic perspective, and against cognitive approaches all together in attempting to conceptualise thinking. Reflection, which according to Ekebergh has been poorly distinguished as a concept from thinking in general, is an intrinsic feature of learning, and should not be objectified or reduced into separate procedural tools designed to enhance it. In view of the lack of conclusive evidence attesting the efficacy of such models and tools designed to enhance thinking and learning processes (Staniforth and Harland, 2006; Mann, et al., 2004; Bell and Mladenovic, 2013; Noormohammadi, 2014), the assumption can be made that a more robust and descriptive understanding of the phenomenon of thinking (in the context of OJL) rooted

in the *actual* nature of thinking as opposed to its *potential* nature, should be primary as a research focus.

Pertinent literature on cognitive theory indicates that holistic non-fragmented approaches may more suitably underpin such a contextual understanding of thinking (Osman, 2004; Carruthers, 2014), and that the role of consciousness be explored as a graded property (Osman, 2004; Baars and Franklin, 2007), rather than one that is simply absent or present. Indeed, Ekebergh further argued that thinking in the context of learning should not be understood as a cognitive or intellectual activity at all (2007, 336), but instead as a subjective phenomenon, using a holistic “lifeworld” approach (2007, 341), supporting the initial intentions of Kolb et al. (1999, 2) to conceptualise learning (and, by default, its inherent thinking-based aspects) as a human experience with a distinctly personal and subjective nature. In light of the prospect of a less problematic depiction of thinking, therefore, a fourth and final body of literature was sourced to explore, using this latter perspective, how and why we find ourselves engaged in experiencing acts of thinking during OJL episodes and situations, focusing on consciousness and its role within a holistic single-system account of thinking.

2.5 Body four: Consciousness and phenomenology

2.5.1 Philosophy of mind and consciousness

As argued in the previous sections, the influence of dual process theories appears to be in part responsible for the conceptualisation of learning in education theory, in terms of whether it's occurrence is either unconscious (tacit) or conscious. The proposition that OJL is predominantly constituted by the notion of tacit learning, has essentially hampered prospective research efforts aimed at exploring it further. Eraut (2004) proposed that the performance of work should be considered primary, with learning as either an intended or unintended result of such work. If learning is defined as the acquisition of new knowledge and considered primarily a cognitive enterprise, then it is the cognitive processes (thinking) associated with the performance of work that must precede resulting learning, and hence represent a worthy research focus in addressing the current impasse in further exploring OJL and its thinking aspects. In the previous sections, the problem of tacit learning was reduced more specifically to the substantial tacit *thinking* that must be taking place therein, and thinking was conceptualised as tacit precisely in terms of the presence or absence of consciousness (Evans and Stanovich, 2013), or more practically, in terms of consciousness as a graded and variable property of thinking (Osman, 2004). In its focus on the central role of consciousness however, this approach engenders the consequent and considerable challenge of defining consciousness itself.

Chalmers explicitly stated that consciousness has thus far “stubbornly resisted” (1995, 200) scientific explanation. According to Merleau-Ponty (1962, 69), consciousness as an object of study presents the “peculiarity” of not being “analysable”, even “naively”,

without carrying us beyond “common sense postulates”. Vygotsky elegantly affirmed the conspicuous yet elusive nature of consciousness by suggesting it is “reflected in the world like the sun is reflected in a droplet of water” (1987, 284). In philosophy, specifically its branch dedicated towards understanding the human mind (*philosophy of mind*), competing views about the nature of the mind, and consciousness itself, have assumed a number of different perspectives in on-going attempts to expound the problem. A *monistic* view depicts either the physical world as an illusion conjured by the conscious mind (idealism), or the conscious mind as an illusion conjured by the physical brain (physicalism). In terms of the mind/body problem, therefore, only one of the two entities can exist ontologically according to the monistic view. In portraying the mind as an illusory projection by the brain, physicalism in particular posits that consciousness is nothing more than, or distinctive from, the relevant brain processes giving rise to it. A *dualistic* view on the other hand depicts mind and body each as ontologically distinct. Consciousness in this case is distinctive from, yet just as real as, and correlated with, the relevant brain processes accompanying it. Attempts by philosophers and scientists to affirm any of these propositions as true have resulted in another impasse (Holman, 2008).

In a particularly influential essay, Nagel (1974) articulated a problem associated with consciousness by positing the question, “What is it like to be a bat?” He suggested that no matter how much we know about how bats “see” their surroundings via the emission and reception of sound waves (echolocation), a human being could never really know what it is like to perceive her surrounding environment in this way, or more to the point, what it is in fact like, to actually be a bat. The question is intended to illustrate

that objective facts do not necessarily suffice in accounting for the “extra ingredient” (Chalmers, 1995) represented by pure subjectivity.

Further explicating the ontologically distinctive nature of pure subjectivity, Jackson (1982) similarly presented the hypothetical case of “Mary”, an expert who knew every objective fact there was to know about colour and the process of colour perception, yet lived in a strange environment completely devoid of the colour red. Jackson argued that if Mary suddenly stepped out of her colourless environment and saw the colour red for the very first time, she would have a “red experience” and learn something entirely new. What exactly would she have learned, however, if she already possessed all objective knowledge about the colour red? The new “knowledge” or “extra ingredient”, according to Jackson, would have to be representative of a kind of pure and ontologically distinct subjectivity.

The difference between objectivity and subjectivity in this sense has come to be known as the “explanatory gap”, and is referred to as the “hard problem” of consciousness, as opposed to comparatively easier problems associated with understanding consciousness that are theoretically discernible in computational or cognitive science terms (Chalmers, 1995). Questions concerning what consciousness is, or indeed where or how it first emerged in what we consider to be *conscious* beings, have persistently eluded traditional branches of philosophy. James described consciousness as an “illegitimate birth in any philosophy that starts without it”, citing the difficulties in tracing its evolutionary origins, as an additional problem in our efforts to understand it (2017, 137). Considering the form of pure subjectivity alluded to by Nagel (1974) and Jackson

(1982), a new branch of philosophy emerged in the early 20th century dedicated to its investigation via an early form of *phenomenology*.

2.5.2 Phenomenology

Early attempts to develop a systematic approach in the study of pure subjectivity are attributed to Franz Brentano (1838-1917) and his influence on the later seminal development of Edmund Husserl's phenomenology, employing methodology one could aptly describe as "human science," as opposed to the more familiar positivist and empirically-based "natural science". Positivist science has been criticised for presenting an insufficient and objectified view of reality, which is actually, in the words of Van Der Steen, more often "messy and ambiguous" (2017, 106).

Brentano sets an important precedent for the systematic study of subjectivity, by positing it as "prior to" (1995, 8) objective science, as a secure and "non-speculative" foundation for it. Only through a thorough and clear discernment of pure, or *inner*, psychology, can one proceed to construct a robust "genetic", or *outer*, psychology that seeks to make claims about the physiological basis of psychological acts. In this sense, Brentano compared *pure psychology* (which he termed "psychognosy") with mathematics, and *genetic psychology* with meteorology, since the latter could never be precise in its predictions (1995, 5). Here, Brentano lays the foundation for Husserl's (1960, 4) later assertion that objective science inevitably leads to "obscurities" in its foundations, discussed in greater depth in chapter three, and that true scientific precision must originate from a preceding systematic study of subjectivity.

Phenomenology concerns itself less with the nature of external objective reality, and more with internal subjective experience, exploring precisely the “experiencing” of objects by subjects, often characterised by such questions as articulated by Nagel (1974), concerning *what it is like* to experience given phenomena. The phenomenological position essentially reduces all of one’s experienced “lifeworld” to pure phenomena, and therefore, pure subjectivity (Husserl, 1970). Where the experiencing of a given phenomenon by a subject has a characteristic *what-it-is-likeness*, a specific conceptualisation of consciousness is implied. In others words, for an experienced phenomena to be *phenomenally conscious*, there must be a, *what it is like* character to it. By situating the act of thinking in the context of OJL, a phenomenological perspective would therefore ask, “*What it is like* to experience thinking while engaged in OJL?”

Dual process theories state that thinking can be fast, slow, automatic, controlled, intuitive, or reflective (Evans and Stanovich, 2013). The argument may be proposed from a phenomenological perspective, therefore, that in an on-the-job context, all these types of thinking can have a distinctive *phenomenally* conscious character, or *what-it-is-likeness*, regardless of whether they are traditionally defined as unconscious or conscious in dual-process terms. In other words, while some of the thinking types deliberately conflated in the afore-cited sequence (fast, slow, automatic, controlled, intuitive, reflective) are categorised as unconscious, they are in fact *phenomenally* conscious. So regardless of how thinking types are categorised according to dual process theories, an assumption can be made that professionals at work are *phenomenally* conscious of experiencing/entertaining thoughts or sequences of thoughts that occur in quick succession as well as slow, that occur automatically as well as in a

more controlled or deliberative fashion, or have an intuitive as well as rational or reflective feel.

Carruthers (2017) posited that, according to traditional conceptualisations of consciousness, we are, in fact, not conscious of any of our thoughts whatsoever. Knowledge of our own thoughts he argued, is not direct. It appears rather to be interpretive in nature, employing the same mental processes involved in interpreting the thoughts of others. So while our thought processes are “unconscious”, our interpretation of them is not, and is thus accessible to us as subjects via *phenomenal* consciousness. Carruthers suggested that we ultimately experience ourselves as entertaining various thoughts, without consciously causing or directly experiencing them. Husserl similarly portrayed thinking as something to be *attended to* by phenomenal consciousness in his statement that, “the thought processes which I really perform are given to me insofar as I reflect upon them, receive them, and set them up in a *pure seeing*” (1973, 23).

The relationship between thinking and consciousness is a prevalent theme in Husserl’s work. “Every mental process, while being enacted can be made the object of a ‘pure seeing’ and understanding, and is something absolutely given in the *seeing*”. Husserl thus presents cognition, and consciousness of it, as central to the very data phenomenology ultimately seeks to uncover via its methods. The perception itself, the *pure seeing*, is for as long as it lasts, “something absolute, something that in itself, is what it is.” It is “data in the imagination” to be seen (1973, 24). Of course Husserl questions whether cognition itself can really accord with “things as they exist”, that it can really “get at them” (1973, 1), alluding to the famous dictum with which he is

commonly attributed, *back to the things themselves*. Through phenomenology, according to Husserl, cognition may be turned inwards, and used to question itself, to uncover its own essence in a way objective science approaches fail. Using traditional natural thinking (associated with the natural/objective science approach), cognition is essentially unable to find a scientific understanding of itself (1973, 22). Phenomenological thinking on the other hand does not seek to explain a psychology of cognition in a natural science sense, but rather to cast light upon the nature or essence of cognition (1973, 25). Husserl refers to phenomenology as a “doctrine of essences” (1973, 1). The methodological aspects of Husserl’s phenomenology are explored in more detail in chapter three, however no discussion on phenomenal consciousness could be considered complete without closer evaluation of Husserl’s specific phenomenological reflections on the essential nature of cognition.

Despite being attributed with the seemingly empirical venture of getting at *the things themselves*, Husserl posited that objects of experience are progressively constituted in and by acts of cognition (1973, 11). Such objects, “exist for me, and for me are what they are, only as objects of actual and possible consciousness” (1960, 65). Phenomenology however departs from an apparent form of radical constructivism (which would suggest that reality is entirely *constructed* subjectively by the mind), in its exclusive focus on the *pure seeing* aspect of experience. The activity of cognitions relating to themselves gives them “intentionality”, the “relating to” an object that, as an activity, exists even if the object itself does not. It is the “relatedness” (1973, 43) that belongs to all cognition that represents the central focus of Husserlian phenomenology. Only phenomena are truly given to the cognising subject. From the phenomenological

perspective, therefore, processes of consciousness are retained with the “acceptance modification” that they are “mere phenomena” (1960, 20).

2.5.3 Cognitive phenomenology

In *cognitive* phenomenology, philosophers have further speculated as to which types of thoughts can or cannot in themselves be subjectively experienced, revealing alternative conceptualisations of thinking to those presented by cognitive science. While it is given that thoughts based on all sensory input or recall, emotional states, moods, and inner-speech, can indeed be experienced, less agreement exists about whether pure cognition, in terms of abstract non-sensory rational/logical thoughts, can be experienced, or even whether such thoughts can exist at all independently of sensory qualities (Bayne and Montague, 2011). In this sense, cognitive phenomenology concerns itself with how non-sensory abstract thoughts that are not easily correlated with sensory processes, are able to manifest as experiences of which subjects are phenomenally conscious.

Regardless of the sensory/non-sensory character of thoughts debated in cognitive phenomenology, however, a theoretical perspective based on *phenomenal consciousness* of thoughts (whatever their form or character) as defined in classical Husserlian phenomenology, appears to evade some of the more restrictive problems incurred by cognitive science, dual process, or even cognitive phenomenology approaches to conceptualising thinking in the specific context of OJL. Ekebergh (2007) argued in favour of a “lifeworld theory” approach to investigating and understanding reflection and its role in professional learning, which is itself rooted in classical Husserlian phenomenology. The person, the world, and all perception and meaning

arising from their confluence combine to form a unity, cumulatively constituting the “lifeworld” as it is defined in phenomenological terms (Husserl, 1970).

2.5.4 Lifeworld approach

In the lifeworld, person, objects and associated perceptions and meanings are experienced as a non-reductive whole. Merleau-Ponty (1962) defines the lifeworld as a “phenomenal field”, a conceptualisation discussed in further detail in chapter three. The very existence of perceptions and meanings in the lifeworld affirms the impossibility of experiencing objects in their absence, supporting Carruthers’ (2007) view that no objects, including thoughts, can be experienced directly, but only indirectly through a veil of perception, through acts of experiencing. This form of personal experience exists within the realm of pure subjectivity that phenomenology seeks to expound, supporting the potential of Husserlian phenomenology and its dedication to pure essence, as a position capable of shedding light on the difficult problem of understanding the essential nature of on-the-job thinking.

Ekebergh (2007) stressed that reflection is not an isolated tool or technique, but is rather an irreducible part of the lived process of thinking and learning. She holds that considering reflection, which has been poorly delineated from thinking in general, as a tool or technique constitutes an insufficient view, and thus argues in favour of the lifeworld approach. Kolb et al. (1999) similarly, yet indirectly, alluded to such an approach by acknowledging the personal subjective nature of learning, which was discussed previously (in section 2.3.4), as a promising position congruous with the main research interests guiding this study. While research on KELT subsequently

departed in pursuit of development and validation of the LSI (Kolb et al., 1999, 11-12), Ekebergh proceeded to make specific and practical suggestions about how the lifeworld approach may be used to cultivate effective professional reflective practice in nursing and nursing education. She defined prospective interventions designed to foster a reflective attitude among nursing professionals, including reflective supervision, and drama or role-play exercises (2007, 338-341).

Prior to applying any conceptualisation of the phenomenon of thinking in context, and using it to develop practical interventions (like those presented in the latter parts of Ekebergh's work), methods, tools or techniques however, it has already been argued (in sections 2.3.2, 2.4.6, and 2.4.3) that an intermediary stage aimed at more robustly defining such a conceptualisation is warranted. The phenomenological lifeworld approach espoused by Ekebergh (2007), as well as initially and indirectly alluded to by Kolb et al. (1999), may be directed at developing a more robust understanding of how, why, and what it is actually like to experience thinking by professionals in the context of OJL, before further attempts are made to develop practical interventions, methods, tools, or techniques ultimately requiring yet further research efforts to validate. Ekebergh's (2007) insights are therefore cited here primarily with respect to their philosophical and methodological implications. Using a phenomenological approach to explore and more robustly define on-the-job thinking (while resisting the temptation to develop or augment models and tools) may serve to avoid methodological pitfalls, such as reliance on dichotomies considered by Eraut to be indicators of "lazy thinking" (2004, 250), or the profusion of ambiguous terminology considered by Tulving to be indicators of an "immature science" (1972, 381). Phenomenology implies that for

science to be truly complete, it should concern itself not only with the systematic study of objectivity, but also with the systematic study of subjectivity (Husserl, 1970).

Such an approach may serve to address the paucity in research on OJL that has resulted from considering it in terms of the tacit-ness problem, and the elusive nature of traditional conceptualisations of consciousness, permeating the education and cognitive science literature. Chomsky asserted the value of seeking fresh direction in contemporary research, by turning to classical questions and issues, using approaches with a “distinctly traditional flavour to them” (2006, 5). The literature to this effect reveals a gap, in that an approach rooted in classical phenomenology, has not been effectively utilised in discerning the nature of thinking in the context of OJL in terms of what it actually is, rather than what it should potentially be. At this juncture, following persistent reflections on the four bodies of literature reviewed, attention was turned towards the articulation of a clear and coherent set of research questions.

2.6 Research questions

In the sector-specific literature, *formal* learning mechanisms available to fitness professionals were deemed insufficient, with *informal* learning instead constituting a majority of relevant and applicable knowledge acquisition. Fitness professionals and managers cited OJL as the most important way of learning (Eraut, 2004; Marsick et al., 2006; Melton et al., 2010; De Lyon and Cushion, 2013), yet further research into the phenomenon has been duly impeded by various problems, including the lack of a universally agreed set of learning outcomes against which its validity can be measured, as well as the tendency for it to occur predominantly tacitly and unpredictably (Eraut, 2004; De Lyon and Cushion, 2013).

Reflection (a form of thinking) was presented by Di Stefano et al. (2014) as a means of maximising OJL via an increase in conscious *explicit* learning, although its effects on unconscious *implicit* learning remain indeterminate. Kolb (1984) similarly alluded to the importance of thinking as an important aspect of learning, by presenting thinking and doing on an equal footing in KELT. Closer evaluation of KELT and the main proponents influential to its “intellectual origins” (Kolb et al., 1999, p. 2), however, did not provide suitably robust definitions for the thinking-based terms used by Kolb (1984).

One of Kolb’s three nominated proponents (Dewey, 1910), offered initial musings on the fleeting nature of thinking, and proceeded to establish a persistent trend that has permeated the literature ever since, of operationalising thinking into procedural outcome-based models and tools designed to enhance its efficacy and usefulness in

teleological terms of what it should or could be, rather than what it actually is. Aggregated acts of thinking collated into terms based on their assumed prospective usefulness, rather than on a rigorous understanding of the underlying phenomenon of thinking, were considered insufficient for expounding the true nature of thinking in the context of OJL for the purpose of this study.

In search of a deeper philosophical perspective on this problem, uncertainty in the modern literature with regard to the nature of on-the-job thinking appears to be rooted at a fundamental level in the actuality-potentiality dialectic. This dialectic may in itself result from the influential nature Aristotle's "four causes" in metaphysical inquiry on modern approaches to philosophical problems. The objectification of thinking in the context of learning, has defined the perspective of scholars towards it, in the same way as one might perceive or understand an object in the Aristotelian sense. While the *material*, *efficient* and *formal* causes refer to the essential constituents, nature, and inner workings of an object, the final cause refers to its function or purpose (Todd, 1976, 319). This latter cause is strongly reflected in modern perspectives in conceptualising complex phenomena. This study, therefore, in terms of classical Aristotelian thought, is aimed at uncovering all but the final cause with respect to the phenomenon in question. In other words, it seeks to explore the essential nature of on-the-job thinking not in light of, or according to, its function or purpose. The knowledge gap resulting from the hindrances preventing further study of OJL and its inherent thinking aspects, as well as the observations of Eraut (2004) that on-the-job thinking in action is riddled with significant yet unacknowledged complexity, warranted a foray into literature surrounding cognitive science and philosophy of mind, where the problematic nature of tacit learning was finally reduced to the role of consciousness in cognition.

Holistic non-fragmented approaches were found to most suitably underpin a deeper understanding of thinking in context (Osman, 2004; Carruthers, 2014), together with a consideration of the role of consciousness as graded property (Osman, 2004; Baars and Franklin, 2007), rather than one that is simply absent or present as implied by dual process theories (Evans and Stanovich, 2013). Ekebergh (2007) argued that thinking in the context of learning should not be understood objectively as a cognitive or intellectual activity at all, but instead subjectively as an experienced phenomenon, using a holistic “lifeworld” approach rooted in Husserl’s phenomenology, affirming the initial intentions of Kolb to conceptualise learning (and its inherent thinking-based aspects) as a human experience with a distinctly personal and subjective nature (Kolb et al., 1999, 2).

Using a phenomenological approach to explore thinking in the context of OJL appears to curb the reliance on dichotomies, and the profusion of ambiguous terminology associated with “immature science” (Tulving, 1972, 381). Phenomenology implies that for science to be truly complete, it should concern itself not only with the systematic study of *objectivity*, but also with the systematic study of *subjectivity* (Husserl, 1970). Furthermore, a theoretical perspective based on *phenomenal* consciousness of thoughts, or their *what-it-is-likeness* (Nagel, 1974), evades some of the problems posed by traditional conceptualisations of consciousness arising from cognitive science, dual process, or even cognitive phenomenology approaches that have permeated the education and learning literature, hampering further study of what is ultimately, according to De Lyon and Cushion, “the most important way” (2013, 1413) fitness professionals learn. Given the insights, gaps, problems, as well as prospective

approaches reviewed and presented in all four bodies of literature, the following set of two research questions was formulated;

- 1) According to the subjective experience of PFTs, what is the essential nature of thinking in the context of on-the-job learning?
- 2) How might conceptualisations of thinking as a subjective experience contribute to the advancement of research and development in OJL?

Chapter three: Methodology

3.1 Preamble

In the previous chapter, it was argued that modern theories of education and learning pertaining to OJL should be underpinned by a more robust understanding of the thinking taking place therein. The discernment of the nature of such thinking by researchers has thus far been hampered, particularly by the tacit-ness problem, an impasse resulting, in part, from traditional conceptualisations of thinking as a fragmented system. A phenomenological “lifeworld” approach as espoused by Ekebergh (2007), combined with a conceptualisation of thinking as a single, holistic, and non-fragmented system, from a standpoint based on subjectivity, were presented as viable means for the facilitation of a deeper understanding of thinking in the context of OJL. This central argument is developed throughout the ensuing chapter, with the aim of crafting a coherent research design suitably positioned to address the main research questions outlined in the previous chapter.

Fundamental approaches to research and interpretations of a general scientific method are considered first, as a foundation to the emerging design. Classical phenomenology is then considered, not only in terms of its methodological aspects as fundamental components of the research method, but also in its capacity as a general philosophical orientation underpinning the study as a whole. The main principles and tools of phenomenology are thoroughly discerned and augmented with more modern phenomenological research techniques, in the articulation of a coherent five-step research method. In the second part of this chapter, a detailed description of the application of the five-step method in, first, a pilot study, and second, the main study, is

given. An outline of the researcher's position, as well as an introduction to each of the ten PFTs participating in the main study are presented in Annexes 1 and 3.

3.2 Fundamental approaches

Literature on research methodology typically defines two fundamental and archetypal approaches to academic inquiry, namely those broadly termed *quantitative* and *qualitative*. Hammersley succinctly proposed the single unitary goal for both approaches simply as, the “production of knowledge” (1998, 140). Any methodological aspirations to this effect should, according to Robson, emanate from a “scientific attitude”, which involves working “systematically, sceptically, and ethically” (2004, 18). The development of a “complete science” unequivocally faithful to such an attitude, remains a compelling philosophical endeavour, and represents a key theme in the influential works of Franz Brentano and Edmund Husserl, as discussed extensively throughout this chapter. Scholars have regularly attempted to systematically define a universal “scientific method”, the essential features of which, according to Creswell (2002, 8), are evident in prevailing modern step-based approaches to research.

3.2.1 The scientific method

In various articulations of a prospective universal scientific method, experiencing, observing, and hypothesising about phenomena in the world are typically followed by measuring, experimenting, classifying, or quantifying, which in turn give way to correlating or generalising, and finally, building explanatory and predictive theories (Mouly, 1978; Cohen et al., 2007). How such a method ultimately manifests itself in specific research cases is necessarily dependent on the nature of the questions under investigation, which, according to Cohen et al. (2007, 7), can vary according to their pertinence to either inanimate natural phenomena, or animate personal phenomena. In other words, whether the knowledge being produced primarily concerns *objects* or

subjects, represents at least one conceptualisation of the distinction between the two main paradigms, and will influence how the scientific method is actually implemented in practice by researchers engaged in problems involving an objective-subjective dichotomous characteristic.

According to Flick, while quantitative research seeks to “measure and quantify” objects by “isolating cause and effect” (2002, 2), qualitative research actively attends to subject-object influences that are not clearly reducible to quantifiable cause and effect (2002, 5). In other words, while quantitative research actively “eliminates” (2002, 3) the subjectivity of researcher and participant influence, qualitative research actively emphasises interactions between the researcher, participants, and the “field” (2002, 6). The philosophical dialectic concerning objectivity and subjectivity revealed in the previous chapter, which represents an important feature of the main research aims underpinning this study, thus emerges methodologically. The quantitative approach, in this sense, broadly encompasses articulations of the scientific method aimed at the study of *objectivity*, while the qualitative approach broadly encompasses articulations of the scientific method aimed at the study of *subjectivity*.

Mouly (1978) and Cohen et al. (2008) presented procedural step-based articulations of the scientific method resonant with objective inquiry and the *quantitative* approach, based on acts of classifying, quantifying, and correlating before approximating to the truth or theorising. Miles and Huberman (1994) similarly articulated a step-based scientific method resonant with subjective inquiry and the *qualitative* approach, based on commonalities observed across a range of modern qualitative studies, where quantifying and correlating are substituted by reflecting, and identifying relationships,

patterns and themes. A synthesised scientific method faithful to all three accounts (Mouly, 1978; Miles and Huberman, 1994; Cohen et al., 2008) invariably comprises acts of; (1) observing or experiencing, (2) classifying or organising, (3) analysing or explicating, (4) testing or validating, followed by (5) theorising or generalising, and finally, doing so “systematically, sceptically, and ethically” (Robson, 2004, 18). In each step of the sequence cited above, the first and second action verbs cited, are intended to reflect the quantitative and qualitative approaches respectively.

As suggested by Cohen et al. (2007, 7) the objective-subjective dialectic is precisely where the two archetypal approaches diverge in their methodological application with respect to the context of this study. The qualitative approach actively considers the subjective and interpretive aspects associated with personal and natural phenomena as valid research foci, while the quantitative approach does not. Indeed, Marshall and Rossman use the terms “qualitative” and “interpretive” interchangeably (1999, 2). Robson further underlines this philosophical distinction by presenting *relativism*, which depicts reality as subjectively constructed, as the main antithesis to *positivism*, which depicts reality as objectively constructed, thereby associating the two concepts with the qualitative and quantitative paradigms respectively (2004, 22). While all research efforts will generally proceed systematically and rigorously in congruity with the scientific attitude, the methods employed must ultimately depend on the archetypal approach most suited to the research problem in question, and its associated philosophical implications.

The main research aims presented in the previous chapter in respect to the first question specifically, were based primarily on essence, namely the development of a robust

definition of the essential nature of thinking as it occurs in subjects engaged in OJL contexts, and to describe this essence employing a systematic research approach that is faithful to the scientific attitude. The emphasis on clarification and explication as opposed to quantification and analysis predisposes a qualitative approach towards addressing the essentially “non-experimental” (Salkind, 2003, 221) questions driving this study.

3.2.2 Philosophical assumptions

The origins of qualitative research can be traced back to academic interest in understanding foreign cultures in the US during the early 20th century, culminating in the modern sciences of ethnography (Flick, 2002, 7), and anthropology, as popularised by the prominent, publicly acclaimed, academic work of Maragaret Mead (Jarvie, 2016, 360). It has since become an important mode of inquiry in areas with a distinctive human element, such as education, psychology, sociology, social work, health care, and management (Miles and Huberman, 1994; Boyatzis, 1998; Marshall and Rossman, 1999). Salkind posited qualitative research as a “non-experimental” method to “rigorously explore academic questions”, and explain various phenomena where “additional context” is needed, in a way that quantitative research would “miss” (2003, 221). Marshall and Rossman similarly proposed its major purposes are to “explore, explain, or describe a phenomenon of interest” (1999, 33).

While quantitative research is typically based on the positivist perspective, philosophical assumptions, or “general philosophical orientations” (Creswell, 2014, 35) underpinning qualitative research typically include relativism (Robson, 2004, 23), interpretivism (Miles and Huberman, 1994, 8), symbolic interactionism (Flick, 2002,

16), constructivism (Creswell, 2014, 37), and Husserl's transcendental idealism (1960, 86). Collectively, all these assumptions broadly characterise the notion of subjectivity and its role in constructing or shaping individual and collective experiences of the world. In his definition of relativism specifically, Robson emphasised the position that no external reality exists independently of consciousness, inasmuch as some phenomena are considered to exist not "out there", but "in the minds of people and their interpretations" (2004, 23). While Husserl's (1960) transcendental idealism, strictly speaking, advances and essentially diverges from this position, Robson's (2004) relativism represents a basic antithesis to positivism that clearly and fundamentally differentiates the qualitative philosophical orientation from that of quantitative ideas. Flick adds to the qualitative conceptual philosophical framework by positing further structuralist and psychoanalytical assumptions, which encompass the notion of deep, underlying, or unconscious phenomena also influencing the construction of individual and collective experiences (2002, 16). While the qualitative approach has become more formalised since its inception, however, it is nevertheless *not* considered to be based on any one single unified theoretical or methodological concept (Flick, 2002, 7), engendering the need for qualitative researchers to clearly discern the philosophical orientation, or "theoretical lens" (Creswell, 2014, 98) assumed in their particular approaches to research problem/s in question. A specific and distinctive philosophical lens, therefore, is hereby argued, summarily;

Following a review of four bodies of literature, an impasse in the study of OJL was previously delineated, based on its tendency to occur predominantly tacitly. The problem of tacit learning, was then reduced more specifically to the tacit *thinking* that must be taking place therein. The experiential subjective approach was discussed as a

prospective means of resolving the impasse and potentially facilitating renewed efforts by researchers to explore OJL as a worthy focus, given that it has already been credited with yielding the majority of professional learning following the cessation of initial formal education and training. Ekebergh's (2007) proposed "lifeworld" approach towards conceptualising thinking and reflecting in a less problematic way, reveals the Husserlian phenomenology in which it is rooted, as a uniquely positioned theoretical lens for the continuing development of this thesis both philosophically and methodologically. Throughout the following sections, the adequacy of phenomenology (and by default, Husserl's transcendental idealism), as both a theoretical lens and methodological tool, therefore, is elucidated in depth.

3.3 Phenomenology as a philosophical paradigm

In the previous chapter, Nagel's (1974) reflections on *what it is like* to be a bat yielded a discussion of the notion of a form of ontologically distinctive pure subjectivity, supported by Jackson's (1982) narrative deliberating the colour expert Mary's "red experience" upon seeing the colour red for the first time. Husserl similarly asserted that for the blind, theories of colour, "give no *seeing* clarity about the meaning of colour as those with eyesight have it" (1973, 4), as indeed it is for the deaf, for whom objective knowledge of sound and music give no *seeing* or comprehension of how such sounds ultimately translate to the experience of hearing music (1973, 30-31). Nagel, Jackson, and Husserl posit subjectivity as central to furthering our understanding of personal as well as natural phenomena, particularly where scientific or academic investigation has been limited exclusively to the consideration of objective facts alone, as appears to be the case in the evident basis of education and learning theory in cognitive-science-based approaches to explaining thinking and consciousness.

Epistemologically speaking, therefore, through its focus on pure subjectivity, phenomenology collapses the internal and external character of *inner* conceptual knowledge of an *outer* world, with the mediating *experiencing* of objects by subjects as its primary focus. Phenomenology refutes the necessary existence of subjects and objects, and affirms only a mediating *pure seeing* as actually real. From an ontological perspective, such a focus does not therefore seek to make claims about the existence of the subjects or objects implied by the pure subjectivity of experience mediating them. This distinction specifically marks the afore cited divergence of Husserl's (1960) transcendental idealism, from Robson's (2004) relativism, since, by questioning the existence of the mind, the possibility of anything existing "inside" it, must also by

default be simultaneously questioned. As a philosophical discipline, phenomenology is considered distinctive from the branches of epistemology and ontology, precisely in its focus not on knowledge or existence, or for that matter on an *ontologically* distinctive pure subjectivity (due to a direct reference to ontology) as implied by Nagel (1974) and Chalmers (1982), but rather, exclusively, on *pure seeing*, as nothing other than a *phenomenon*, to which considerations of a strictly ontological nature simply do not apply. It is also considered for that matter, as related to, but similarly distinct from, the other major philosophical branches of metaphysics, logic, and ethics (Woodruff Smith, 2003).

3.3.1 The science of subjectivity

As a valid research methodology applicable in modern contexts, the *scientific* merits of phenomenology, as emphasised by Creswell (2014, 98), must also be clearly discerned by qualitative researchers with respect to their main research aims. Further to the universal scientific method discussed earlier (in section 3.2.1), the basic tenets of phenomenology as a valid science of subjectivity, suitably poised to discern the essential nature of on-the-job thinking, are therefore discussed in this section with respect to key insights provided by the classical phenomenologists in their pursuit of a truly *complete* science.

The “scientific concept” is, according to Merleau-Ponty, based on “fixing and objectifying phenomena” (1962, 63). Husserl referred to such traditional *objectifying* positive sciences as “naively constituted objectivity” (1960, 147), and while having led to “brilliant development throughout modernity”, are now hampered by “obscurities” in their fundamental concepts and methods (1960, 4). In his compelling narrative based on

interpretations of key contributions to science by Charles Darwin (1809-1882), Isaac Newton (1643-1727), and René Descartes (1596-1650), Noam Chomsky (2006) provides additional context for some of the problems arising from the centrality of objective natural science in modern research. Despite postulating a set of fundamental laws of mechanics (including gravitational forces and motion), that have served as a profound catalyst for the advancement of modern natural science, according to Chomsky, Newton struggled with the mysterious notion of a hidden force acting at a distance between objects separated by empty space, citing it as an “occult quality” of matter.

Newton’s failure to discern the essential nature of gravity, despite being able to accurately explain and predict its effects mathematically (outcomes constituting nothing less than a revolutionary impact on general scientific and technological progress), was a source of dissatisfaction to the eminent scientist. Darwin later asked rhetorically why thought, as a “secretion of the brain”, should be considered any “more wonderful than gravity”, itself similarly an emergent property of matter (Chomsky, 2006, ix). An occult quality of matter like gravity in this regard, as alluded to by Darwin, is inseparable from the Cartesian notion of mind as an occult quality of the physical body. The mysterious nature of gravity that eluded Newton (like the mysterious nature of the mind that similarly eludes us), which a *complete* science should indeed be expected to describe, remains elusive even today, given the current capabilities of prevailing scientific approaches. The “brilliant development” (Husserl, 1960, 4) later resulting from what Newton himself might have considered an *incomplete* science (implied by his dissatisfaction, as noted by Chomsky), has nevertheless validated modern natural science as a dominant method, and sidelined the scientific enterprise of *discerning*

fundamental concepts. According to Chomsky, discernment of essence has effectively been “abandoned” in favour of a “more general scientific attitude” (2006, 7), fit for the specific purposes marginally construed as scientific development today, although riddled by “obscurities” in its fundamental concepts, as predicted by Husserl (1960, 4).

According to Brentano, objectifying phenomena for the purposes of quantification and correlation leads to paradoxes in objective science, that are linked to long-debated, and as yet unresolved, philosophical problems. However many points are superimposed on a continuous line, for instance, and however many measurements we are able to make between the positional differences of such points, the line itself, according to Brentano, judged only on the merits of its fundamental nature, represents a continuous line and a unity with no gaps anywhere (1995, 112). The notion Brentano alludes to here, may be further clarified and illustrated by his thoughts on the substantial and long-standing philosophical problem of how, “out of nothingness, something can come into being.” According to Brentano, it cannot be shown how something can come into being out of nothing, however, it *can* be explained how “plurality can arise out of unities, even though no unity is a plurality” (1995, 113), as implied by his example of the continuous line, whose plurality of objectified gaps are not part of its essential nature. The mathematics of *gravity* in this respect, are not part of, nor do they cast light upon, its essential nature, accounting for Newton’s dissatisfaction (Chomsky, 2006) with his scientific achievement.

Objective science is a science of “references” inasmuch as it *refers* to the objects it studies, while subjective science is a science of “self-givenness”, inasmuch as it *reduces* phenomena to those fundamental essences that are “self-given” (Husserl, 1973,

46). Accordingly, it is a reduction to the most basic constituents of meaning, such that objective science can only begin, therefore, where subjective science ends. According to Brentano, there can be no “perfect” science, or even perfect language for that matter, without a perfect “psychognosy” (1995, 72), which he defined as a pure psychology, that clearly “determines the elements of consciousness” (1995, 13), and hence also, the most fundamental elements of natural phenomena. The fundamental elements of natural phenomena are thus *determined*, because they can ultimately only be considered as existent by us, individually and collectively, via their presentation to, or concordance with, fundamental and agreed elements of consciousness.

Only by constructing basic (and agreed) judgements of essence, argued Husserl, can we attain the secure objectivity that a truly complete science demands (1973, 55). Argued as such, the obscurities currently hampering further investigation of OJL resulting from traditional conceptualisations of thinking, which are rooted in objective scientific approaches, warrant an alternative approach, through the use of subjective scientific approaches, in pursuit of a more robust underpinning to modern theories of learning. Indeed, phenomenology has been used, as a subjective science approach, in attempts to discern some of the most challenging of all obscurities in science. Seminal phenomenological works on fundamental scientific problems include Husserl’s (1960) own critique of cognition, ego, spatio-temporality, and consciousness itself, Merleau-Ponty’s (1962) critique of perception, space, temporality, and freedom, and Heidegger’s (1982) critique of “being” and temporality. Phenomenology is thus presented not merely as an alternative to natural, positive, and objective science for the exploration of only specific questions in marginal domains, but rather, as wholly fundamental to it, as its underlying basis. In this regard, the second research question asks how traditional

and fundamental theories in education and learning might benefit from reconceptualisation based on a more “complete” (Husserl, 1973, 55) scientific perspective.

Husserl precludes the scope of phenomenology from entertaining any efforts to “deduce or calculate” (1973, 5), and continues to establish the practicalities of its core methodological tenets. It does not “theorise or carry out mathematical operations”, but rather proceeds by, “seeing, clarifying, and distinguishing meanings” (1973, 46). It is based not on the “pure logic” (1973, 14) typically associated with objective science, or as Husserl put it, “natural thinking” arising from “natural science”. Rather, it is based on a form of philosophical thinking arising from “pre-epistemological reflections” (1973, 18), in the tradition of Descartes (1908) who similarly endeavoured, like Husserl himself, towards basing all sciences on an absolute foundation via fundamental insights behind which “one cannot go back any further” (Husserl, 1960, 1). It is phenomenological analysis, which, according to Merleau-Ponty, “endows scientific operations with meaning” (1962, 68). Using natural thinking, or the “natural attitude”, given evidence is compared with other evidence, weighed, and accepted or rejected. Such “natural” cognition need not question itself, but philosophical thinking does (Husserl, 1973, 15). Husserl accordingly developed a form of philosophical reduction initially in accordance with the method of Cartesian doubt, based on a refusal to accept anything as existent unless it is “secured against every conceivable possibility of becoming doubtful” (1960, 3).

Ultimately, the thematic “object” (intended here as *target* or *that which is focused upon*) of Husserl’s reductive pre-epistemological reflections could exist even if the

world itself (as implied by natural positive science), does not (1960, 30). It is in this sense, that Merleau-Ponty asserts how conscious reflection (philosophical thinking) essentially “breaks” the world (1962, 42). If the world does not exist, then neither can the senses, since they are rooted in physicality. By abstaining from using the senses, however, the very act of abstaining surely exists and, “is what it is”, within a stream of “flowing subjective processes” (Husserl, 1960, 42) called the “lifestream” (Husserl, 1960, 20). In other words, if everything is doubtful, then the very cognition that makes such a judgement, must be certain (Husserl, 1973, 23). At this precise juncture, Cartesian thought and Husserl’s phenomenology, begin to depart.

Descartes’ *cogito* (or *that which is left after everything doubtful has been philosophically discarded, or the thinking mind as an entity distinct from the physical body*, illustrated by the famous Cartesian notion of, *I think therefore I am*), following a complete application of the method of Cartesian doubt, must exist if all else does not. Husserl’s phenomenology departs here by denying the *cogito* as ontologically distinct, because such a distinctive entity would have to be responsible for the mind-body divide as implied by Cartesian dualism. The *objects* of phenomenology, therefore (in this case the *cogito* that must be yet further examined), are not objects in the ontological sense, but instead exist in the “lifeworld”, itself a “phenomenon of being, instead of something that is” (1960, 19). Phenomenology is thus presented as a “science of pure phenomena” (1973, 36), and a tool fit for the further dissemination of Descartes’ *cogito* (an application discussed in further detail in the following sections). According to Husserl, anything belonging to the world, only “exists for me, in that I experience it, perceive it,

remember it, think of it somehow, judge about it, value it, desire it, or the like” (1960, 21).

The application of phenomenology as a valid scientific method, to a discernment of the essential nature of on-the-job thinking in a practical research context, at this stage, requires a further discussion of its fundamental principles. Despite the various particular expressions phenomenology has assumed in modern research contexts, the aim of the next section is to review its main, fundamental, or core, principles, in relation to the context and aims of this study.

3.3.2 Principles of phenomenology

Husserl (1960) demonstrated the practical application of phenomenology in his meditations on the nature of, among other phenomena, cognition itself, and indeed, Descartes’ *cogito*. These meditations, in particular, reveal the tools of phenomenology in exquisite detail. Further to Brentano’s (1995, 31) original commitment towards creating a method for the development of a complete *pure psychology* (psychognosy) to suitably underpin objective science, Husserl proceeds earnestly with the development of a complete method of phenomenology. From an empirical natural scientific standpoint, Vygotsky stated unequivocally that, “one cannot study the relationship of a thing to itself” (1987, 42). Rather than explain cognition in a “*natural science* sense”, therefore, as would be the case with approaches rooted in modern psychology, Husserl attempts to, “cast light upon the nature or essence of cognition” (1973, 25). In doing so, the nature and capabilities of what has come to be known as *transcendental* phenomenology, are revealed in Husserl’s work. As discussed in the previous chapter, traditional conceptualisations of the nature or essence of cognition (thinking), appear to

have fallen victim to the types of “obscurities” Husserl professed as the inevitable consequences of objective science (1960, 4). In order to discern the nature of cognition in a way that might more robustly underpin modern theories of education and learning, congruous with the underlying aims of this study, a “seeing, clarifying, and distinguishing (of) meanings” (1973, 46), is called for, and Husserl’s phenomenological meditations on cognition thereby represent a promising methodological point of departure. According to Husserl, acts of cognition have no “objective meaning” but rather, “subjective truth” (1973, 36). They are personal, and go on immanently, or “wholly within (oneself)” (1960, 82). When cognition reaches beyond itself, or past what is “immanent” to what is beyond, or “transcendent”, it is said to be “transcendental” (1973, 3). Transcendence is the idea of *reaching* an object. It is a central tenet of phenomenology, and accounts for common references to Husserl’s phenomenology as being *transcendental*.

The activity of cognitions both *reaching* and *relating themselves* to objects (again, objects in the sense of *targets*, or *what is focused upon*) gives them “intentionality”. The *relating to* an object as an activity exists even if the object itself does not. Intentionality is a key concept in Husserl’s phenomenology and can be defined as the “relatedness” that belongs to all cognition (1973, 43). Such intentionality exists in the constitution of all objectivities, given prior even to the acts of cognition themselves, rendering intentionality a truly fundamental idea in the phenomenological approach, through which the constitution of all subjective processes as “real natural objects in the objective spatio-temporal world” (1960, 80), are made understandable. Englander (2016, 4) cites this concept as the crucial distinctive factor driving phenomenological inquiry as a subjective science, namely its consideration of *intentionality* as opposed to

causality (as in the case of objective science investigating relationships between objects). Husserl's ideas on intentionality reveal a conspicuous influence by Brentano, who made the earlier assertion that every psychological act is *directed* upon an object, a directedness of consciousness that constitutes the object as an *intentional* object. In other words, according to Brentano, the intentional object exists for the thinker, "as long as the thinker has it as his intentional object" (1995, 26).

If the world itself to which cognition thus relates is constituted transcendently in each person, then it must also be constituted among *all* those who carry out such acts of cognition. Transcendental "inter-subjectivity", according to Husserl, is what effectively constitutes an "objective world", that has "made itself objectively actual" (1960, 107), as a "world of men and things" (1960, 129). It is disclosed to us in the full concreteness with which it is incessantly the "life-world for us all" (1960, 136). Husserl also refers to the world as an "idea", or the, "ideal correlate of an inter-subjective (inter-subjectively communalised) experience, which ideally can be, and is, carried on as constantly harmonious" (1960, 107). Merleau-Ponty later conceptualised existence in the lifeworld as a "phenomenal field", based on the ideas of classical or quantum field theories in physics, and inspired by their application in Gestalt psychology. While a magnetic or gravitational field will mediate the interactions between physical objects, the phenomenal field mediates interactions between subjective experience, body, and objects in the world. The phenomenal field is not an "inner world", and phenomena are not "mental facts" or "states of consciousness" located *inside* subjects, but rather, subject, body and world are inseparable as wholly interacting features of existence (1962, 66). The constitution of phenomenal experience is the primary emergent property resulting from interactions between subjective experience, body, and the world

in the phenomenal field, just as gravity is considered the primary emergent property resulting from interactions of objects in a gravitational field. Everything that is transcendently constituted as phenomenally conscious experience, according to Husserl, is inseparable from “transcendental inter-subjectivity”, which in turn “constitutes actuality of being and sense” (1960, 64). The possibility of a reduction to inter-subjective insights behind which one cannot go back any further, that are representative of a fundamental and shared essence of the phenomena they describe, makes phenomenology possible as not only a philosophical idea, but also as a scientific method. Uncovering fundamental and shared essence of the phenomenon of thinking in the context of OJL, therefore, through the use of phenomenology, is intended, in accordance with the first research question, as a prospective basis for re-conceptualising some of the problematic foundations upon which education and learning theories are based.

3.3.3 Descriptive and interpretive phenomenology

Lopez and Willis warned that implementation of any method by researchers without examining its philosophical basis effectively undermines the “purpose, structure, and findings” of their work (2004, 726). Englander further stressed the importance of *phenomenological* researchers, in particular, building their methodology on “solid philosophical grounds” (2016, 2). Since “assumptions drive methodological decisions” (Lopez and Willis, 2004, 726), the main philosophical position underpinning this study is thereby further situated through this section and the next, in relation to the two main prevailing styles of phenomenology prevalent in the modern research context; namely those denoted *descriptive* and *interpretive*. According to Giorgi et al., the “division” between the two remains “unresolved” (2017, 179).

The descriptive approach is typically attributed to the methods developed and employed by Edmund Husserl, while the interpretive approach is attributed to the later work of Martin Heidegger. These two styles have also been differentiated in the context of modern phenomenological research as “transcendental”, and “hermeneutic” phenomenology in the case of Husserl or Heidegger respectively. A third style is also commonly cited, namely, “existential” phenomenology, which is attributed to the works of Maurice Merleau-Ponty and Jean Paul Sartre (1905-1980), and is discussed in the next section as an additional component of classical phenomenology (Eddles-Hirsch, 2015, 252), since it is not directly associated with the descriptive-interpretive dialectic.

As proponents of the descriptive approach, Giorgi et al. (2017) emphasise the Husserlian idea of targeting pure intentionality, reaching those truly immanent and fundamental insights that are unencumbered by anything transcendently posited. As proponents of the interpretive approach, on the other hand, Smith and Osborn (2008) emphasise the Heideggerian idea that *being* is inseparable from context, and that the phenomenological attitude is always pervaded by preconceptions, culture, and history. While the two approaches are indeed widely presented as dialectically opposed, it is worth noting that both Heidegger *and* Husserl acknowledged an interpretive or *constructive* aspect of phenomenological methodology, as well as a descriptive one, in their attempts to ultimately discern the pure essence of given phenomena. Husserl argued that the “secure objectivity science demands can be attained only by *constructing* basic *judgements* of essence” (1973, 55), a methodological observation corroborating Heidegger’s (1982, 21) notion of *constructed* narrative. Any final exposition by researchers concerning essence will, therefore, invariably contain

interpretations and judgements. Creswell similarly asserts that modern qualitative phenomenological methods are intended to “*build* the essence of experience *from* the participants” (2014, 100), emphasising the inescapable role of the modern researcher in both constructing the essence, and making interpretive methodological decisions about how to proceed with acquired data.

Before building or constructing narratives, therefore, phenomenological researchers begin with data comprising various configurations of participant/researcher, descriptive/interpretive elements that, faithful to the qualitative tradition, actively consider interactions between the “researcher, participants, and the field” (Flick, 2002, 6). In practical terms, the main distinction between descriptive and interpretive approaches in modern phenomenological research, in this view, is primarily evident, in the initial phase of analysis, with regard to the nature of the emerging data to which the phenomenological method is applied.

The descriptive Giorgi et al. (2017, 182) method initially focuses on delineating and describing the units of meaning expressed by research participants. The final composite description is then constructed using themes derived directly from those meaning units. The interpretive Smith and Osborn (2008, 67-69) method does not require the delineation of units of meaning in the text, but rather, annotation by the researcher of reflective observations corresponding to specific meaning-rich passages in the text. The final composite description is then constructed using themes derived from the annotations themselves. Final composite narratives by phenomenological researchers, therefore, are constructed either directly from participant descriptions in the first

(descriptive) instance, or indirectly from researcher interpretations of participant descriptions in the second (interpretive).

The interpretive style is particularly relevant in cases where the research questions require researchers to probe hidden or deeper aspects of the phenomenon, actively asking critical questions of the text, about things that “leak out”, of which participants themselves may not necessarily even be aware (Smith and Osborn, 2008, 53). Van Manen defined the “ambition” of interpretive phenomenology as an exploration of, “the many possible ways in which we may experience and meaningfully understand our world” (1996, 47).

The selection between modern descriptive or interpretive methods in the modern phenomenological research context, therefore, must depend primarily on the nature of the phenomenon in question, and the specific research question/s posited by the researcher. In the context of the specific research questions guiding this study, the descriptive-interpretive dialectic is relevant most specifically to the initial treatment of data, which, as argued in this section, is only later increasingly subjected to the main, or fundamental, principles and tools of phenomenological analysis. In other words, a reflective phenomenological research design suitably positioned to “systematically, sceptically, and ethically” (Robson, 2004, 18) explore the phenomenon of on-the-job thinking, that is not defined *exclusively* in terms of either the descriptive or interpretive style, is construed in detail in the following sections, drawing on various relevant tools (be they associated with either the modern descriptive or interpretive styles) for the initial phases of data collection and sorting, to then proceed with an in depth phenomenological analysis faithful to the fundamental tenets of pure phenomenology in

the classical style, that are essentially free or unencumbered by modern dichotomous conceptualisations of the method as either distinctively descriptive or interpretive. An evaluation of each of the tools and analytical techniques incorporated into the design, is presented in the following sections.

3.4 Phenomenology as a research design

Creswell (2014, 41) nominates phenomenology as one of five major research designs in modern qualitative research. It is considered a “popular” approach in “social and health sciences” (2014, 236), comprising various methods and instruments for the “rigorous and systematic” exploration of “individual lived experiences” (Marshall and Rossman, 1999, 3). Some examples of the lived experiences explored by modern phenomenological researchers include, for instance, caring for dementia patients by spouses at home (Hye-Young and Myungsun, 2017), stress and burnout among licensed alcohol and drug counsellors (Crim, 2017), and being a career-professional woman and Mormon mother (Greenfield et al., 2016).

Dawson conceptualised the qualitative paradigm as a continuum, with a “highly qualitative” end where data is analysed reflectively, and an opposing end where qualitative data is treated in a more quantitative way, by counting and coding (2013, 116). Positioned at the “highly qualitative” end of this spectrum, phenomenological research is heavily dependent on a “reflective turn of mind” on the part of the researcher (Miles and Huberman, 1994, 9). The reflective analysis must be systematic and rigorous, while retaining flexibility and adaptability depending on the research questions (Dawson, 2013, 119). In this section, some of the core principles of the phenomenological method, as it is expressed in both modern (descriptive and interpretive) *and* classical contexts, as well as their practical implications in light of the underlying philosophical assumptions and specific research questions underpinning this study, are explored. Maintaining methodological flexibility and adaptability, the rationale for a rigorous phenomenological research process is presented, culminating in

a clearly defined five-step method. Three main perspectives are therefore interwoven in the ensuing narrative to elucidate the construction of this method.

The first, is based on a general overview of paradigmatic research approaches and modes of academic inquiry (Mouly, 1978; Miles and Huberman; 1994, Flick; 2002; Salkind, 2003; Robson, 2004; Cohen, 2007), and a qualitative interpretation of the synthesised scientific method discussed earlier (in section 3.2.1), summarised as, (1) experiencing, (2) organising, (3) explicating, (4) testing/validating, and (5) generalising. The second perspective is based on classical phenomenology, and draws on the main principles and methods of Edmund Husserl, Martin Heidegger, and Maurice Merleau-Ponty, organised according to the phases of reduction, construction, deconstruction/eidetic analysis, and description.

The third is based on more modern phenomenological research methods involving tools and techniques typically associated with the descriptive or interpretive approaches. According to Van Manen, while phenomenology was previously the “sole reserve” of philosophers, it has since also been “taken up” by “non-philosophers”, namely, “scholars in education, pedagogy, psychology, psychiatry, and other health sciences”. This has led to a “struggle” to determine which methods are “most appropriate” for the study of human phenomena (2002, 24). The third perspective, therefore, draws on the main phenomenological methods used to explore human phenomena in modern research contexts (Moustakas, 1994; Van Manen, 1996; Smith and Osborn; 2008, Giorgi et al., 2017). A complete phenomenological method is thereby sought, that is faithful to the fundamental tenets of phenomenology, while embracing its various expressions, and tailored according to the unique requirements of the research questions

posited in the previous chapter. In the following sections (3.4.1 and 3.4.2), phenomenological reduction and eidetic analysis are specifically presented as the main tools of phenomenology, and discussed with respect to their application to data sourced via modern data collection and sorting techniques relevant to an exploration of the phenomenon of on-the-job thinking, as it is experienced from the subjective viewpoint of PFTs.

3.4.1 Phenomenological reduction

At the heart of the phenomenological method lies the notion of transcendence. Experience is based on the internal or immanent givenness, constituted by a *reaching out* towards something that is external or transcendent. Understanding what is transcendent, as opposed to what is immanent, enables use of the “chief distinguishing tool” of phenomenology (1960, 32); the “phenomenological reduction”, which according to Husserl, is accomplished by excluding all that is transcendently posited (1973, 4). It has already been said, that the thematic object of Husserl’s reductive pre-epistemological reflections could exist even if the world itself (as implied by objective science) does not (1960, 30). What is left, therefore, with traditional conceptualisations of the world thus held in abeyance, constitutes the kind of unobscure basis for science that Husserlian phenomenology aims to uncover.

The act of phenomenological reduction requires the phenomenologist to employ an attitude Husserl termed “free epoché”, which involves inhibiting acceptance of the objective world as existent, along with all the facts of objective science, effectively excluding them from the field of judgement (1960, 25). Brentano originally asserted that, “something can be a phenomenon without being a thing in itself” (1995, 137),

emphasising that objects, in this sense, do not have to exist, because only the intentional judgement of them does (1995, 91). The intentional judgement, or rather, the *directedness contained within* the intentional judgement (intentionality itself), is what phenomenology strives to bring into focus. There is an immanence of cognition that is given, a “givenness in the absolute sense” (Husserl, 1960, 27), that becomes thereby accessible by excluding all that is transcendent. Pure *givenness* or *relatedness* of experience are described by Husserl as the “intentional constituents” (1960, 79) of experienced phenomena, which are set up in a “pure seeing” (1973, 23) via phenomenological reduction, or in other words, a *stripping-away* of the layers that obscure pure intentionality. Sartre (1989) emphasised the purity of the intentionality of consciousness as absolute, non-personal, and distinctive from the concepts and constructs in the world to which it attends.

Reduction is a process of unveiling, involving a tracing back of the history of “intentional references”, uncovering them, and making them knowable as “formations subsequent to other antecedent formations” (1960, 79). Husserl maintained that such formations are “concretely” open and accessible to investigation, so the reflective process inherent in phenomenological reduction must strive, step by step, towards an ever-deeper uncovering of an “explication” or “unfolding” or “becoming distinct” of what is meant, in search of the fundamental intentional constituents themselves (1960, 46). Merleau-Ponty described the experience of phenomena as occurring in a reality that is accessible to us via a “methodological bridge” or “intentional analysis”, that “makes explicit” or “brings to light” the “pre-scientific life of consciousness” (1962, 68). Sartre similarly refers to a “pre-reflective cogito” as the “primary consciousness” (1989, 34) which phenomenology pursues. The approach, or “phenomenological

attitude”, termed “epoché” (Husserl, 1960, 25) needed to execute the reduction process, is similarly defined by Giorgi et al. as the perspective whereby “all knowledge derived from sources other than what is directly given to consciousness has to be *bracketed*” (2017, 178). According to Husserl, with all else thus “bracketed” (1973, 34), that which is reduced ultimately represents “absolutely immanent data” (1973, 33), whereby the essence of the phenomenon, or “*eidos*” (1960, 70), “comes into view” (1960, 25). In short, the *phenomenological reduction*, as the principal tool of phenomenology, is affected by employing the attitude of *epoché*, involving a *bracketing* (holding in abeyance) of all that is transcendently posited, including all facts of objective science, and all judgements of the world as existent in the way natural thinking presents it.

The qualitative interpretation of the synthesised universal scientific method discussed earlier (in section 3.2.1), comprised five steps, namely, (1) experiencing, (2) organising, (3) explicating, (4) testing/validating, and (5) generalising. Phenomenological reduction represents the second and third steps inasmuch as it involves transforming the original data/concepts obtained in step one (experiencing), through an intuitive/reflective bracketing process (organising), into an initial version of an uncovered inter-subjective composite depiction (explicating) in steps two and three. Aagard clarified the main difference between Husserlian (classical) phenomenology and modern phenomenological research, at this stage, as precisely the *origin* of the experiential data. The phenomenological method in the latter case is applied to detailed accounts of experience sourced from others, usually via interviews, and not directly from the reflecting phenomenologist (2017, 521). The “in-depth” interview transcript, according to Eddles-Hirsch, is what “forms the basis of the data” in phenomenological studies (2015, 254). In the case of classical phenomenology, examples of “data” originating

directly from the reflecting phenomenologist, would include deep conceptual problems, like those explored in the classical sense by the likes of Brentano, Husserl, Heidegger, Merleau-Ponty, and Sartre (being, consciousness, spatio-temporality, etc.). So, at stage three in a practical phenomenological study set in the modern context intended to explore the subjective experiences of a designated sample population, the “data” will constitute a “correlate of an inter-subjective (inter-subjectively communalised) experience” (Husserl, 1960, 107), shared by participants.

Throughout the early stages of analysis, therefore (steps one to three), modern phenomenological researchers employ various techniques in working towards an initial inter-subjective description, initiated by fully familiarising themselves with the interview transcripts by “reading and rereading” them (Smith and Osborn, 2008, 67; Giorgi et al., 2017, 182). Phenomenological researchers then proceed by either delineating units of meaning from each transcript (Giorgi et al., 2017, 182), or annotating what is “interesting or significant” (Smith and Osborn, 2008, 67) about various aspects of the transcript. Miles and Huberman define this latter method as the “formulation of reflections and remarks” (1994, 9). In both cases, expressions intended to highlight the meaning of the lived experience (Giorgi et al., 2017, 182) are articulated by the researcher, all the while maintaining the phenomenological epoché that is essential to the reduction process. These two initial approaches to the data represent the descriptive and interpretive styles discussed earlier (3.3.3), and their selection will depend on the nature of the phenomenon and the question/s posited by the researcher. At this particular stage, in this study, as clearly discerned later (in section 3.5.2), the research method designed to explore the essential nature of on-the-job thinking aligns itself distinctly with the interpretive style, through the construction of

annotated expressions focused on what is “interesting or significant” (Smith and Osborn, 2008, 67) about the participants’ accounts.

In both cases (descriptive or interpretive), such expressions become themes, which are then “clustered” according to their mutual compatibility, or in other words, subjected to “sorting and sifting based on similarities, differences, relationships, patterns, or sequences” (Miles and Huberman, 1994, 9). The clusters themselves are then given names to form “superordinate themes” (Smith and Osborn, 2008, 72). Moustakas (1994, 181) advocates the articulation of “textural and structural” descriptions for each individual interview at this stage, the relevance of which, once again, must depend on the nature of the phenomenon in question. In Smith and Osborn’s (interpretive) method, a final pooling of superordinate themes is carried out to identify cross-sample commonalities, culminating in a further abstracted set of final themes, or according to Moustakas (1994, 182), a complete “composite textural and structural description”. A narrative account may then ultimately be constructed (Smith and Osborn, 2008, 76), constituting an *eidetic* description. In pursuit of a complete phenomenological method, the articulation of an inter-subjective composite at this juncture was considered insufficient for the purposes of this study, and is therefore referred to only as the *initial* eidetic description (comprising only up to step three in the qualitative interpretation of the synthesised universal scientific method), requiring yet further analysis according to the fundamental tenets of *classical* phenomenology.

3.4.2 Eidetic analysis

Throughout his own execution of the reduction process, Husserl admitted to his use of expressions and descriptions which contained *a priori* concepts (1960, 71). For a truly

rigorous application of the phenomenological method, therefore, such concepts, in themselves, must be further clarified and delimited to arrive at true essence, employing deeper “eidetic intuition”, which together with the phenomenological reduction itself, determines the “sense” of transcendental phenomenology (1960, 72). According to Heidegger (1982), phenomenological reduction is only one of three basic components of the phenomenological method. In the development of an initial eidetic description, the articulation of themes involves “projecting antecedently given being and its structures”, a process he termed “phenomenological *construction*” (1982, 22) representing the second component of his phenomenological method. Since forms vary according to the mode, circumstance, and domain in which they occur (such as nature, space, and time), according to Heidegger, they are essentially predetermined or pre-characterised. Merleau-Ponty, in fact, posits interpretation as the basis of perception itself (1962, 42), maintaining that the constitution of conscious perceptions are not directly apprehended (1962, 46), but rather indirectly *interpreted*. For the phenomenologist, even the most radical efforts to “begin all over again” are pervaded by traditional “concepts, angles, and horizons” (Heidegger, 1982, 21). The initial eidetic description, therefore, is, to a certain degree, as Heidegger professed, always interpretively *constructed*.

The ultimate aim of the phenomenologist is to reach a universal idea or pure “eidós” perception, whose ideal extension is made up of “all ideally possible perceptions” (Husserl, 1960, 71), engendering the need for further reflective analysis. It is worth noting at this juncture, that Husserl (1960, 29) in fact proposed two stages for transcendental phenomenology as a science, which are theoretically compatible with Heidegger’s three components, and ensure the commonalities between phenomenology

and the synthesised universal scientific method do not end at step three in the articulation of an initial eidetic description (inter-subjective composite account). Husserl's first stage is characterised by an exploration of the realm accessible to transcendental self-experience with "simple devotion to the evident inherent in the harmonious flow of such experience", with additional questions set aside (thus encompassing Heidegger's first and second components, and steps one to three of the qualitative synthesised scientific method), and the second, by a criticism of transcendental experience and all transcendental cognition. In other words, while Husserl's first stage culminates in an inexact/constructed initial eidetic description, the second involves a further critique of it, resonant with the validation expected at step four of the synthesised universal scientific process. For the purpose of disambiguation here, the term "validation" is used to represent the process portrayed by Cohen et al. (2008) and Miles and Huberman (1994) in general research terms, involving a return to the field by the researcher, where preliminary analyses are re-tested prior to making generalisations in both quantitative and qualitative research.

Since the initial eidetic description is, according to Heidegger (1982, 23) always "constructed", the concepts contained therein must be "de-constructed" down to the "sources from which they were drawn", via a critical and essentially "destructive" process (Husserl's second stage). In this way Heidegger seeks a more "genuine character" to the phenomenological method, and termed his third (and final) component of the phenomenological method; "phenomenological destruction". Stage four validation according to the synthesised universal scientific method may, therefore, be fulfilled via a continuing reductive/destructive analysis through continuing use of epoché and eidetic intuition (Husserl's second stage/Heidegger's third component).

Analyses of perceptions in the phenomenological context at this stage are “essential” or “eidetic” analyses.

We become conscious of something universal by imagining all variations (Husserl, 1960, 71), of those essences encapsulated in the initial eidetic description. Using such “free imaginative variation” (Aagard, 2017, 521; Giorgi et al., 2017, 182) the phenomenologist reflects on aspects of the holistic description, to differentiate “incidental from essential” features (Aagard, 2017, 521). If the phenomenon “collapses” when a feature is imaginatively removed, then the feature is considered essential, and thus retained. Incidental features are thereby removed (Giorgi, 2017, 178), to reveal the “eidos”, the “beheld universal” of what is essential for “every formable form” in this free variation. It is the “pure essence”, it is “prior to all concepts” (Husserl, 1960, 71). Eddles-Hirsch defines “imaginative variation” in the context of modern phenomenological research more simply as, “seeing” the phenomenon from a variety of perspectives, to “understand the essence of participants’ experiences” (2015, 252). She actively defines *essence* precisely as the *essential* and invariant structure of the phenomenon (2015, 259) that must remain intact in retention of fundamental meaning. Through imaginative variation, therefore, the final phenomenal eidos is revealed, representing the fifth and final step of the qualitative synthesised universal scientific method.

The phenomenological research method applied in this study, therefore, can be hereby summarised, taking into account Husserlian and Heideggerian (classical) phenomenology, modern phenomenological research methods, and the qualitative synthesised universal scientific method, in the following steps:

- 1) *Experiencing* via collection of data
 - Interviewing and transcribing
- 2) *Organising* via phenomenological reduction
 - Reading, rereading, reflecting, and annotating
- 3) *Explicating* via construction of an initial eidetic description
 - Expressing themes, clustering, and articulating superordinate themes
- 4) *Validating* via destruction/eidetic analysis
 - De-constructing main concepts, and differentiating incidental and essential features
- 5) *Generalising* via the final eidetic description
 - Revealing the pure essence of the phenomenon

In the following sections, the application of this five-step research method with a view to addressing the two main research questions guiding the study, is comprehensively elucidated. In section 3.5.3, a thorough exposition of criteria designed to enhance rigour throughout its implementation, are also presented.

3.5 Application of methods

3.5.1 Data collection

Instrumentation

The data collection instrument used to source initial descriptions of the experience of on-the-job thinking was “face-to-face” (Creswell, 2014, 239) participant interviewing. Interviewing is considered the main, or “exemplary” (Smith and Osborn, 2008, 57), data collection procedure for “qualitative human scientific research” (Englander, 2012, 13). It was selected to facilitate deep, rich, and varied discussion on any aspects of the phenomenon of thinking participants deemed relevant in the context of their OJL. According to Leedy and Omrod, qualitative interviewers must remain alert for “subtle yet meaningful cues” in participants’ “expressions, questions and occasional sidetracks” (2010, 141). Such cues, expressions and side-tracks were noted and recorded throughout the course of the interviews, so as not to interrupt the flow of participants’ narratives, enabling further discussion of otherwise noteworthy cues or sidetracks later on.

The interview style was “episodic” (Flick, 2002, 106) and “semi-structured” (Robson, 2004, 270), inasmuch as specific episodes were used as a basis for a relatively free-flowing subsequent discussion. In his phenomenological study on alcohol and drug counsellors cited earlier (in section 3.3.3), Crim (2017, 37) explored the phenomenon of interest (stress and burnout) using an episodic interview style, by asking participants to share “stories” from their work experiences. The sharing of stories based on PFTs experiences at work was similarly deemed particularly relevant in the context of this study, inasmuch as memorable stories would contain ample opportunity to explore

deeper aspects of participants' affective and reactive thought-processes contained therein, or otherwise surrounding such episodes and/or situations. According to Smith and Osborn, phenomenological interviews should be *guided* by the schedule, rather than *dictated* by it (2008, 58). The schedule was, therefore, based on an initial open-ended question, followed by additional probes. In order to situate the phenomenon of thinking in the context of OJL, participants were asked to focus on on-the-job episodes that were memorable and formative, inasmuch as they left an impression, and preferably changed some aspect of their practice. Multiple additional episodes or sidetracks were welcomed throughout the interviews, with a main focus always retained on pertinent thoughts and thinking processes.

Englander suggested that, in order to yield the kind of meaning-rich descriptions required for phenomenological analysis, questions initiating episodic phenomenological interviews should be based on the wording, "Can you please describe, in as much detail as possible, a situation in which you..." (2012, 26). With regard to OJL episodes, therefore, participants were asked the following open-ended question at the start of their interviews;

"Can you describe, in as much detail as possible, any significant experiences, situations or episodes arising throughout the course of your work, that are particularly memorable, and influenced you in some formative way?"

The initial question was then followed by the main probes, "What were your thoughts? What went on in your mind? Why do you think you thought that?" To elicit descriptions about the nature of such thinking, further probes and prompts were used, such as, "How did that thought present itself to you? Did it pop into your head? Was

there a train of thought, and if so, can you describe it?” Additional temporal probes were also used, such as, “Did you think about the episode afterwards? Did any thoughts you had prior to the episode influence you in any way? Did you have any thoughts at any time in between (in the case of a series of related episodes)? Is this occurring to you just now?” Additional contextual aspects were also probed, using such questions as, “Were there any other factors guiding your thoughts or influencing you in any way?” A collated set of probes and prompts used throughout the interviews is presented in the interview schedule in Annex 4.

Approximately one week prior to the scheduled interview date, each participant was contacted by phone. The general scope of the interview was discussed, with an immediate follow-up by email, containing the consent form (included in Annex 2), general information about the study, and main questions re-iterated. Englander suggested such preparatory communication prior to the main interview may help to enhance the richness of the accounts participants are able to provide. In some cases however, it may compromise the interview’s “raw, spontaneous and pre-reflective signature” (2012, 27). While participants were asked to think of episodes for discussion prior to the interview, such episodes tended to serve merely as a starting point, and quickly led on to other points of discussion for which they had not prepared, ensuring the interviews contained both reflective *and* pre-reflective signatures.

Each interview lasted between one, and one and a half, hours. According to Robson (2004, 273), interview durations of under half an hour are unlikely to yield valuable insights, while durations in excess of an hour might place “unreasonable demands” on busy participants. The duration of the interviews was, therefore, intended to probe the

upper limits of this threshold, to maximise the breadth of data yielded, and fit inside the typical time slots expected of a PFTs' schedule (given that sessions with clients generally last between 40 to 50 minutes and can therefore be accommodated within one-hour intervals). Participants were asked to nominate their preferences regarding convenient times for arranging the interviews, which, taking into account the freelance and personalised nature of PFTs' schedules, were always accommodated. Interviews were also conducted in venues selected by the participant, preferably where they met their own clients for initial consultations and health assessments, in a bid to assist their recall of work-based episodes and associated thoughts. This was also done to promote a sense of comfort and familiarity for the participants. Once again, due to the small distances involved in traveling around the island of Malta, where the research was carried out, participants' location selections were always accommodated. Subject to permission, interviews were recorded using an audio recording device (*Olympus VN-722* dedicated recorder and *Samsung J120F* mobile phone audio recorder as backup) for later transcription.

Sampling

Englander cited "representativeness" (2012, 34) as a key concept guiding the reflecting and planning process for sampling in phenomenological research. Further to the personal positionality and reflexivity of the researcher (outlined in section 3.6.1), this study was originally conceived based on observations and reflections concerning OJL in the health and fitness sector specifically. Throughout the review of four bodies of pertinent literature, the main research problem was also initially situated in the context of PFTs' OJL, rendering PFTs themselves, ideal candidates for the constitution of a representative sample. Like many other roles, the health and fitness profession

exemplifies certain cultures, schools of thought, jargon, equipment, well-known personalities, popular media sources, and common practices or procedures. Role-specific jargon in any sector would require explicit clarification for interviewers whose expertise happens to exist outside the sector in question. While impartiality in this sense might, in itself, provide valid data in relation to certain research foci, the main focus in this study was based on phenomena underlying, yet accessible only through, the comparatively superficial semantics and references contained within participants' descriptions of on-the-job episodes or situations. In other words, the researcher, being familiar with the context of participants' experiences, was able to "go beneath" the "immediate experience" (Aagard, 2017, 523), and attempt to access the deeper underlying nature of their thinking. Participants used terms like 'induction', 'functional training', 'compound movements', 'cutting', 'referrals', 'cardio', 'super-sets', 'planks', 'metabolism', 'spinning', 'circuits', 'tri-sets', 'primal flow', 'burpees', 'rep-max lifts', 'olympic lifts', 'metcon', 'peak pose', and 'leg extensions' throughout the course of the interviews, in ways that were central to the context and meaning of the various episodes or situations being described. When such terms were used, there was no need for the researcher to stop and clarify their meanings. Misunderstanding thereof on the part of the interviewer would have impeded efforts to continuously probe deeper, thus keeping the main research interest on thinking in focus. In short, considering the position and prior expertise of the researcher, as well as the nature of the original research interests leading up to the undertaking of the study, PFTs represented the ideal sample for a rigorous exploration of on-the-job thinking.

According to Miles and Huberman (1994, 27), qualitative research typically involves purposive rather than random sampling. To purposively select participants, Englander

posited various questions designed to assist qualitative researchers, namely, “Does the subject belong to the population that I am sampling?” (2012, 18), or, “Do (they) have the experience that I am looking for?” (2012, 19). In their study on the experience of caring for a spouse with dementia at home, cited earlier (in section 3.3.3), Hye-Young and Myungsun (2017), for instance, proceeded with the straight-forward sampling criteria predetermined by the nature of the experience they sought to study, recruiting the spouses themselves as the primary source of experiential data, on the grounds that they had, in fact, cared for a spouse with dementia at home. The role of modern fitness professionals has been described as “multifaceted” (De Lyon and Cushion, 2013, 1415), requiring specialist technical knowledge (Malek et al., 2002), with PFTs in particular, considered to be at the “front line” of fitness service provision among the wider population of other fitness professionals operating in the sector (Maguire, 2001; De Lyon and Cushion, 2013). Furthermore, De Lyon and Cushion found that OJL represents the “most important way” (2013, 1413) fitness professionals acquire the knowledge and skills required to meet these challenging requirements of their role, in an industry characterised by a constant state of flux (De Lyon and Cushion, 2013, 1416; Rosado et al., 2014, 28). PFTs, therefore, in view of their central position in health and fitness service provision, the challenging nature of their role, and the continuous pressure to recruit clients and get results, represented an enticing population for a sourcing of varied learning-rich episodes, situations, and experiences.

While purposive samples in qualitative research are typically small (Miles and Huberman, 1994, 27), Englander (2012, 13) stressed that sampling in phenomenological research should not depend on essentially quantitative questions such as, “*How many?*” Representativeness in qualitative research depends

predominantly on the *quality* of data participants are able to provide, and not on the *quantity* of participants constituting the sample. Depending on the nature of the phenomenon and research questions posited, actual sample sizes in qualitative phenomenological studies, according to both Englander (2012, 13) and Creswell (2014, 239), generally consist of at least three participants who are representative of the phenomenon in question, with Creswell further stipulating an upper limit of ten participants.

In accordance with qualitative methodological thinking, any additional sampling criteria should similarly depend on the prospective quality of the acquired data. In his phenomenological study on stress and burnout among drug and alcohol counsellors, for instance, Crim (2017, 37) included additional criteria by recruiting counsellors representative of, first, a range of experience levels and career stages, and second, with a minimum of one year of experience. For this study, therefore, further to Crim's sampling strategy, in order to achieve maximal representativeness and quality, interviews were carried out with ten PFTs, representing the upper limit of Creswell's (2014, 239) guideline on sample size, at various formal qualification levels, areas of expertise, and ages, of male and female genders, and with various amounts of professional industry experience (with a lower limit of at least two years, although this eventually ranged from a minimum of four years to over ten).

A shortlist of ten well-known PFTs who were active in the industry at the time (2016-2017) was drawn up, and contact with each made via phone, on line chat applications, or email. While all PFTs who were contacted initially agreed to participate in the study, at least three were difficult to confirm appointments with, and either postponed or

eventually cancelled their interview appointments. For one of the prospective PFTs, this happened numerous times over the course of two months. The “snowball” (Miles and Huberman, 1994, 27) sampling method was used to find replacements in these cases, as participants themselves, following the conclusion of their own interviews, knowing the nature of the experiences being sought, made various suggestions as to who they believed could also yield valuable insights. PFT08, PFT09, and PFT10 were all recruited in this way. The interviews eventually yielded ten transcripts totalling 151 pages (79,247 words) of data. Table 1 below collates basic information about the participants, valid at the time of their respective interviews.

Pseudonym	Gender	Age (Years)	Area/s of Expertise	Industry Experience (Years)	Formal Qualification Level (EQF)	Transcribed Pages
PFT03	Male	31	Figure, physique and bodybuilding	9	4	17
PFT04	Male	27	Referrals and special populations	7	6	14
PFT05	Male	26	Weight loss and lifestyle change	6	4	13
PFT06	Female	42	General Population	17	3	16
PFT07	Male	30	General Population	10	3	14
PFT08	Male	26	Weight loss	9	4	13
PFT09	Female	35	Muscle growth	5	3	15
PFT10	Female	26	Weight loss	6	4	20
PFT11	Female	39	Yoga	5	4	14
PFT12	Male	23	Body and lifestyle transformation	4	4	15

Table 1: Collated information on participants

Ethics

An informed consent form was issued, discussed, and signed on the day of the interview. The research was considered to pose little risk of emotional or physical harm to participants. While the sensitivity of the topics discussed in the interviews was considered to be minimal, three ethical considerations were nonetheless made when planning the study, prior to contacting the participants.

The first issue concerned the notion of sharing insider professional knowledge or practices, or what participants might consider to be their trade secrets. The competitiveness of the local sector may have resulted in a reluctance to share information, based on the fear that competitors may use it to their own advantage and own professional development, thus constituting greater business threats. Second, qualification level may have represented sensitive information some of the participants might have been reluctant to share, given the view some PFTs may have of certain specific and dedicated PFT qualifications as a right of passage in the sector, given the controversy reported by Rosado et al. (2014) among fitness professionals' perceptions of various qualifications. Four of the participants were actively working towards additional qualifications at the time of their interviews, and may not have wanted to divulge such information, and some possessed existing formal certification that might not typically be fully associated with the role.

And third, personal or sensitive information about clients involved in the episodes or situations discussed throughout the interviews, might be divulged. With a population of under half a million, many people in the close-knit communities of Malta tend to know who works where, and in which positions. There was an ever-present risk, that

participants and their clients may be easily identified through deductive disclosure. Over and above the credible promise of confidentiality, therefore, participants were assured that where applicable, every effort to confidentialise the data, providing limited specific details when describing their background and experience, would be made.

Several key points were thus stressed to the participants before the commencement of each interview as part of the process of ensuring informed consent. First, that their participation was strictly confidential, and every effort would be made to conceal their identity and the identity of their clients. Second, that the primary focus of the interview was to answer the research questions, and not to reveal or expose specific aspects of their professional practice. Third, that the transcripts would be returned to them for verification before being used in the study. And fourth, that a write-up of the final research findings would be provided in order to share any knowledge gained, that might prove beneficial to them.

3.5.2 Data analysis

Step one; Transcription

Each interview was transcribed in detail directly from the audio recording device, and input into an open-source word processor application (*LibreOffice Writer*) on a net book (*Asus Eee PC* running a *Linux Lubuntu* operating system). The transcribed text included pauses, incomplete sentences terminated mid-flow by the participants, as well as gestures or non-verbal cues included in parentheses. For the main sample, each transcript was named according to the participants “PFT03” through to “PFT12”. According to Miles and Huberman, qualitative analysis begins with data in the form of words, typically sourced from observations or interview transcripts (1994, 9), which

form the “basis of the data” in phenomenological studies (Eddles-Hirsch, 2015, 254). The transcripts were printed and filed in soft plastic files. With all ten transcripts in hand, the data analysis phases according to the planned step-based research method outlined in the previous section was initiated at step two. A complete sample of an interview transcript is included in Annex 5.

Step two; Reduction

Each transcript was “read and reread” (Smith and Osborn, 2008, 67; Giorgi et al., 2017, 182), to develop familiarity with the text. During these first readings, the phenomenological attitude of epoché was initiated and cultivated, fostering sensitivity to the immanent aspects of what was meant by the participants, and every attempt made to suspend judgements based on objective facts. Smith and Osborn’s approach to interpretive phenomenological analysis was employed, by annotating interesting or significant aspects of the text (2008, 67), that were revelatory of the essence of participants’ thoughts. This was done by hand-writing annotations in the margins of the printed transcripts themselves. Since phenomenological reduction is a “tracing back” process, the annotations were intended to uncover “intentional references” as “formations subsequent to other antecedent formations” (Husserl, 1960, 79). Annotations were, therefore, intended to be a first stage of the tracing-back process towards the essence of the participants’ experience of on-the-job thinking. Some annotations were designed to capture basic essence, while others resulted from more of an interpretive and “reflective turn of mind” (Miles and Huberman, 1994, 9). For instance, the following transcribed excerpt describing how PFT10 often found herself replaying thoughts about a session in her mind, was highlighted and annotated simply as, “*Reflections as replays in the mind, likened to a broken record.*”

“I guess maybe it just keeps replaying in my mind, so whatever it is. I mean I’ll probably do the same with this now. (laughs) This is the way it is for me. I don’t know I guess it’s kind of like a broken record sometimes.” (PFT10)

The annotation in this case simply expressed the basic sense of the thoughts she experienced, without much need for an interpretive turn. The following excerpt from PFT06 was similarly annotated simply as, *“Split-second reaction resulting from quick thinking.”*

“But the thought of... those split seconds of seeing her legs literally move into going... moving and then complete still, they went still and she went down on the treadmill... she just stopped moving, and her body was still up so when she was coming back I said, ‘She’s coming back she’s coming back, what’s she doing?’ And that was like just a quick reaction to grab her arm.” (PFT06)

In some instances, however, more interpretive annotations were made, suspending incidental features as well as any judgments of truth, as was the case with the following excerpt from PFT03’s interview transcript, concerning his conceptualisation of a prior confrontation with a client.

“The manager was put in a very bad position because one of his good instructors had a case with a client, and the client was... you know, reporting to the managers and the owners, and he was put in a bad position. And unfortunately, to not look bad, he had to give something to the client.” (PFT03)

The excerpt was annotated as, *“Making assumptions about the position/motives of others, based on own sense of self.”* Reference to “others” in this annotation represents the manager, while “sense of self” represents the PFT03’s view of himself as “one of (the manager’s) good instructors.” In constructing the annotation, the *validity* of the

assumptions made, or of the *sense of self* held by the participant, did not alter the basic essence of the particular retrospective thought on the matter the participant had experienced and was describing. The *incidental* or more superficial features were thereby considered to have been removed, in favour of an annotation based instead on the *essential*, or underlying, features of the thought.

In the following excerpt, PFT07 described his reaction to a situation that surprised him. The empathy he felt towards his clients' parents was annotated previously, so this particular excerpt was instead noted due to the precise way he described his experience of the thought at that particular moment in time, by articulating a question to himself.

“And I'm like, ‘Oh my God her parents have sent her here to train and, you know... and how many other things are there... how many things that can take her mind off training are here?’” (PFT07)

The excerpt was annotated as, “*Self-questioning triggered by surprise.*” While the expression attempts to describe the underlying essence of the thought, it also contains interpretive elements, inasmuch as the concept of *self-questioning* or *self-talk*, is in fact constructed, and previously held by the researcher in a way that influenced the observation made. In other words, other researchers may have observed and noted an entirely different aspect of the same excerpt, using different conceptual constructs, not in fact based on self-questioning or self-talk. Smith and Osborn's (2008) interpretive style of phenomenological analysis, therefore, was clearly influential at this crucial stage of the analysis, thus in turn influencing all subsequent stages. The four excerpts cited in this section are intended to give an overview of the types annotations made, and to what extent subjective interpretation on the part of the researcher was invested in their identification and articulation. Throughout chapter four, numerous excerpts from

the participants are interwoven in the narrative, to elucidate precisely how annotations emerged from the transcripts during this initial phase of data analysis. A complete sample of annotations for one of the interviews (with PFT07) is included in Annex 6.

Step three; Construction

In the next stage of analysis, the hand-written annotations themselves were extrapolated from the printed transcripts and entered into separate word processing files for each participant. During the process of extrapolation and transfer, the annotations were edited and worded more succinctly, and thereby “transformed into themes” (Smith and Osborn, 2008, 69). At this stage, the analysis was increasingly based on a “reflective turn of mind” (Miles and Huberman, 1994, 9). Commonalities between the sense of each theme were reflected upon, and compatible themes cut and pasted to form clusters. Smith and Osborn suggested phenomenological researchers at this stage, “imagine a magnet with some of the themes pulling others in and helping to make sense of them” (2008, 70). The clustering process was an intensive and key stage of the analysis, highly reflective, and carried out with continuous regard for the phenomenological attitude of epoché. Of the 160 themes extrapolated from PFT07’s transcript, for instance, one of the clusters that formed at this stage, was based on the common theme of self-talk or self-questioning, and consisted of the following 21 themes;

Self-questioning triggered by surprise

Self-talk/self-questioning after an episode

Self-talk as one of the processes of the “compass”

Self-talk as a very personal and private process

Self-talk as an ability arising from self-awareness

Self-talk and reflection not possible when busy and distracted

Self-talk as a means of evaluating behaviour from a young age

Self-talk as an important and valued process

Self-talk as a "guiding voice"

Self-talk as a comforting ability

Self-talk as a natural process not needing controlling

Inner voice offering restraint and insight in times of need, not needing to be controlled

Inner voice as part of self, acting as other

Presence of inner voice a reassuring sign of good health

Absence of self-talk as a sign of excessive stress

Self-talk absent when stressed or overwhelmed

Knowledge of others' self-talk or lack thereof

Concern of sounding crazy when talking about self-talk and inner voice

Suspicion that self-talk could become unhealthy in excess

Internal voice jokingly considered as other person

Noticing self-talk in others

Additional more succinct expressions to describe each cluster were then articulated to form "superordinate themes" (Smith and Osborn, 2008, 72), for each cluster throughout all ten transcripts in turn. The above cluster for instance, was expressed as a superordinate theme via the expression, "*Communicating with self*".

Throughout this process, super-ordinate themes duly emerged consistently across the ten transcripts. Based on their commonalities, and continuing reflective analysis, a final

set of eight main super-ordinate themes was abstracted from all ten interviews, representing an emerging “invariant structure” (Aagaard, 2017, 521), or “structural synthesis” (Marshall and Rossman, 1999, 113), of the “inter-subjectively communalised experience” (Husserl, 1960, 107) of participants’ thinking in the context of OJL. The above cluster from PFT07’s transcript, for instance, originally entitled “*Communicating with self*”, was combined with other clusters based on thinking while communicating, to eventually read, “*Thinking while communicating (with self or other)*”, as a superordinate theme among the invariant final eight.

Any attempts by the researcher to construct a detailed final narrative at this stage based on the eight superordinate themes, thus concluding the analysis, would have constituted an incomplete view (the *initial* eidetic description), from the classical phenomenological perspective. According to the five-step research method developed for this study, which also draws directly on classical Husserlian and Heideggerian approaches to phenomenology, further reflective analysis was required before attempting to articulate a purer essence of thinking in the context of OJL (the *final* eidetic description).

Step four; De-construction

Initial eidetic descriptions, according to Heidegger (1982, 23), contain concepts that must be “de-constructed” down to the “sources from which they were drawn”, via a continuing critical and essentially “destructive” process. The invariant super-ordinate themes, which in themselves constituted an initial eidetic description of the phenomenon in question, were subjected to another stage of phenomenological analysis to uncover the “intentional references” (Husserl, 1960, 79) contained within them.

According to Husserl, analyses of perceptions at this stage are “essential” or “eidetic” analyses, during which the reflecting phenomenologist strives towards “something universal”, by “imagining all variations” (1960, 71). “Free imaginative variation” (Giorgi et al., 2017, 182) was thereby carried out by a continued differentiation of “incidental from essential” features (Aagard, 2017, 521). If the essence of on-the-job thinking “collapsed” when a feature was imaginatively removed, then the feature was considered essential, and thus retained (Giorgi, 2017, 178).

At this stage, the eight superordinate themes were listed, and imaginative variation carried out through intensive reflection, and the sketching of various diagrams and flow charts, to visualise possible structural configurations. An sample of such a sketch, photographed during this period, is included in Annex 7. Which essences were integral to others, or where themes might share underlying essence, were important considerations during these reflections. Each conceptualised configuration was considered in terms of whether it could work as a description of “pure essence” (Husserl, 1960, 71) of the phenomenon of on-the-job thinking, without causing it to “collapse” (Giorgi, 2017, 178). For instance, the “*Thinking while communicating (with self or other)*” theme, was eventually combined with other forms of interaction with self, others, or the environment, and eventually constituted as one of four final themes of essence that read, “*On-the-job thinking as interaction*”. Finally, these main themes were traced back through the entire analytical process to the source transcripts and participants’ own descriptions to determine their overall relevance and fit. Chapter four illustrates the emergence of all themes, superordinate themes, and final main themes as they relate back to the transcripts in the words of the participants themselves. It is organised according to the main themes as headings, and superordinate themes as sub-

headings. The chapter is then concluded via a narrative based solely on the four main themes as an inter-subjective explication of the phenomenon of thinking in the context of OJL, constituting an *initial* eidetic description.

Step five; Description

Following reduction, construction, de-construction, eidetic analysis, and conceptualisation of four main essential themes, further reflection was carried out, situating the main themes in the context of existing research as revealed in the earlier review of literature, as well as deeper philosophical ideas and problems. These in-depth reflections are elucidated in chapter five, and eventually constituted the *final* eidetic description of the phenomenon of on-the-job thinking.

3.5.3 Rigour

While qualitative researchers seek “quality” data for their analyses, and “quality” findings, then the associated analytical process bridging the two, must naturally facilitate the preservation, and indeed *promotion*, of maximal quality. Salkind’s basic proposition that qualitative research constitutes a “non-experimental” method to “rigorously explore academic questions” (2003, 221), carries some important implications with regard to determining such quality in qualitative research. First, that *non-experimental* questions, by their very design, do not conform with the notion of testing or re-testing findings *experimentally*. And, following from this point, that without *experimental* validation, the notions of “rigour” and “quality” must be defined specifically and uniquely in the context of essentially *non-experimental* qualitative methodology. In its attempts to answer non-experimental questions, qualitative research leads to different kinds of “knowledge claims” (Morrow, 2005, 252) from quantitative

research, and qualitative validity is, therefore, not the same as quantitative validity. Indeed, in qualitative terms, *validity* is typically described using altogether different terminology like, “credibility, transferability, dependability, and confirmability” (Amankwaa, 2016, 121).

According to Morrow, however, such locutions essentially amount to “parallel criteria”, which are still based primarily on “quantitative” or “positivist” ideas (2005, 252). The very terms “*non-experimental*” or “*different knowledge claims*”, in fact immediately predispose a latent rooting of definitions used in qualitative research, in terms of their relationship to apparently more central and pervasive quantitative concepts. *Credibility*, for instance, which is considered a largely qualitative term, may be defined as “confidence in the *truth*” of the findings (Amankwaa, 2016, 121), but Morrow challenges the extent to which participants can be considered “knowers of the truth” (2005, 252), given its use in the phrase, which implies an absolute, or *objective*, truth. This is particularly significant when considering that the very notion of truth, from a phenomenological perspective, is itself in doubt. The goal of transcendental reduction is in fact an explication of, “*subjective truth*” (Husserl, 1973, 36). What’s more, if qualitative research seeks to “actively emphasise interactions between the researcher, participants, and the field” (Flick, 2002, 6), with researchers as “co-constructors of meaning” (Morrow, 2005, 252), then participants and researchers by this definition of credibility would be equally required to be “knowers of the truth”, undermining the very scope or need for truly qualitative methods in the first place. The *truth* sought by qualitative research in this sense is not *absolute truth*, but rather, the faithfulness of articulations as representations of the meaning *intended* by participants, and indeed similarly by researchers themselves.

Transferability and *dependability* are pegged to the notion of repeatability of results, as implied by the quantitative notion of reliability. Morrow highlights the apparent underlying focus on causality (between objects in the world), evident in such criteria (2005, 251), when phenomenological inquiry is, in fact, fundamentally distinctive in its focus on *intentionality* as opposed to *causality* (Englander, 2016, 4). Similarly, *confirmability* in qualitative research has been defined as a measure of neutrality, or the extent to which the findings are shaped by researcher bias (Amankwaa, 2016, 121). This, however, presents the considerable (or in phenomenological terms, perhaps even *impossible*) challenge of systematically discerning each interpretive aspect of qualitative findings, and differentiating it from researcher bias. Husserl wrote that the “secure objectivity science demands can be attained only by *constructing* basic *judgements* of essence” (1973, 55), using a phenomenological attitude that, according to Heidegger, is *always* pervaded by preconceptions, culture, and history (1982, 21), representing a fine and perhaps indiscernible line between interpretation and bias.

Rigour in constructivist or interpretive research must depend on criteria unique to, and based on, distinctly qualitative concepts, and not merely criteria *parallel* to quantitative concepts. According to Morrow, a shift in focus is warranted, away from adequacy of data, towards “adequacy of *interpretation*” (2005, 251) in matters of rigour. She cites various “authenticity criteria” which, together with De Witt and Ploeg’s “framework of expressions of rigour” (2006, 215) in phenomenological research, serve as a more relevant guide to researchers looking to preserve the integrity of interpretive research, and support their methods on more sturdy “pillars” of “relevance and rigour” (Pereira, 2012, 16).

Interpretations should be fair, inasmuch as alternative positions, interpretations or theoretical constructs should be considered (Morrow, 2005, 252). Demonstrating sensitivity to this criteria requires “openness” in the elucidation of interpretive judgements made by the researcher, particularly during the crucial initial phase of annotating “interesting or significant aspects of the text” (Smith and Osborn, 2008, 67). In this study, such elucidation is integrated into the next chapter, via an explication of themes in a way that is traceable back to the original transcribed accounts, in the words of participants themselves. By exposing the original text upon which all significant interpretive decisions were made, it is intended that the reader be able to follow the reflective interpretations, decisions, and judgements made by the researcher, or “researcher reflexivity” (Morrow, 2005, 253) in each instance. A complete set of an interview transcript together with the annotations made in its regard, is also included in Annexes 3 and 4. De Witt and Ploeg term this notion, “openness”, and further defined it as a “systematic and explicit accounting for researcher decisions” (2006, 224). The personal position of the researcher (discussed in section 3.6.1) and review of literature chapter are intended to expose the theoretical influences informing the main interpretive stance assumed during the analysis phase, itself divulged explicitly in this methodology chapter. Thorough and detailed exposition of methodology is, according to Creswell (2014, 139), an important means of establishing the credibility (interpreted here as implied, *rigour*, or more broadly, as *quality*) of qualitative findings. Researchers should “own” the perspective they assume by clearly specifying personal, theoretical, and methodological orientations, values, and assumptions (Morrow, 2005, 257).

“Methodological congruence” via rigorous and appropriate procedures must, according to Pereira, cohere with experiential concerns regarding the plausibility of findings and provision of illumination about the phenomenon in question (2012, 19). De Witt and Ploeg further nominate the criteria of “balanced integration” (2006, 225) in the final presentation of phenomenological research findings, where philosophical concepts and participants’ own words are awarded commensurate exposition in a suitably “thick” description (Morrow, 2005, 255). Morrow further develops this theme in her discussion of “ontological” and “educative” authenticity (2005, 252), wherein researcher, as well as participant interpretive constructs, are to receive suitable maturation and elaboration in the presentation of phenomenological research findings. Rigour also applies to the quality of findings in phenomenological research in terms of “resonance, concreteness, and actualisation” (De Witt and Ploeg, 2006, 226). Respectively, these criteria consider the immediate experience of the reader, as well as the the usefulness and potential for future affirmation of the findings. Morrow similarly asserts, in this latter regard, that findings should “stimulate action”, an outcome she termed “catalytic authenticity” (2005, 252).

In this study, the discussion chapter is, therefore, designed in accordance with the principles of rigour outlined in this section, first, to encompass the notion of interpretive fairness in discerning the final eidetic description. Second, to balance the ontologically and educatively matured and elaborated interpretations with existing philosophical concepts, theoretical constructs sourced from pertinent academic literature, as well as the transcribed accounts of the participants themselves. And third, to present resulting insights in a way that resonates with readers, is applicable, or contains the seeds of applicability in the event of resonance or affirmation in the future.

The main specific criteria considered for the conservation of rigour throughout the study were, interpretive fairness, openness, balanced integration, and catalytic authenticity in the planning, implementation and exposition of methodological considerations and presentation of findings. To further ensure the pervasiveness of these criteria, “auditing” (Amankwaa, 2016, 126) was sought throughout the research process. A peer reviewer and external auditor were formally enlisted during the planning, implementation, and consolidation phases respectively.

Mr Renzo Kerr Cumbo (BEd/MSc), a colleague at the Malta College of Arts, Science and Technology (MCAST), and fellow doctoral student researching sport coaching pedagogy, using a constructivist philosophical approach and qualitative methodology, was formally enlisted in a reciprocal academic relationship as peer reviewer. Philosophical assumptions and methodological issues were regularly and thoroughly discussed throughout the entire study period between 2015 and 2018, and represented a significant influence on the structure and outcome of the thesis. It is worth noting at this juncture, that being employed in a higher education institution also permitted numerous discussions with additional academic colleagues concerning approaches and issues throughout the research process, which, although for the most part incidental and sporadic, also represented valuable insights, and exerted yet further influence on quality and structure. Though mostly informally, numerous discussions on the psychological aspects of the study were also had with Ms Elaine Atkins (BPsych/PGDipVET), lecturer in developmental psychology at MCAST, who provided valuable input particularly during the interviewing and interpretive analysis phases.

Dr Dorianne Caruana Bonnici (Bed/MSc/PhD), another MCAST colleague and post-doctoral researcher well versed in mixed-methods approaches, was formally enlisted as external auditor during the concluding phase of the study, a practice which, according to Creswell (2014, 252), adds to the “validity (implied, *rigour* or *quality*) of qualitative research”. She was not previously familiar with the research project, and was therefore able to provide a fresh, detached, and wholly impartial view in her review of the final manuscript. Her suggestions were duly implemented in a final edit. No proof-readers or editors were enlisted in the development of the final manuscript.

3.5.4 Pilot study

A pilot study was carried out to test every aspect of the five-step research method before implementing it in the main study, retaining focus on the development of methodological robustness and rigour, rather than on the emerging themes and findings themselves. The interviews served as a valuable opportunity to test the clarity of the questions posited, address concerns such as leading the participants, and generally carry out a full rehearsal of the interview process. The relevance of the interview questions could also be evaluated based on the data they eventually yielded, considered on the basis of whether the main research questions were in fact being addressed. Possible omissions from the schedule were also considered with hindsight, upon reviewing these emerging themes, to fill in any gaps identified. The duration of interviews was evaluated in terms of depth and saturation attained. From a practical standpoint, the use of equipment was also placed under scrutiny throughout the audio recording and transcription processes. Finally with the pilot study data in hand, the reduction, construction and de-construction/eidetic analysis methods were practiced.

Two participants were selected for the pilot study. PFT01 was 35 years of age at the time of her interview. She had recently completed a personal training diploma course, and was in the process of changing her career from that of a drama teacher to a PFT. While she did work with individual clients on a personalised basis, the majority of her work consisted of leading group fitness classes with up to 20 clients at a time. Her interview was carried on the 28th of December, 2016, in the administration office of her drama school, where the facilities doubled as a fitness studio. PFT02 was 28 years of age at the time of his interview. He had also recently completed the same personal training diploma course as PFT01, albeit in a different cohort. He did possess, however, additional prior qualifications in sport and fitness, and practiced as a keen amateur athlete in the disciplines of olympic weightlifting and indoor rowing. As an army officer serving in a combat unit, physical fitness represented a significant influence on him both professionally and personally. His interview was carried out on the 7th of January, 2017, in a relaxation area outside the “Crossfit box” (specialised “Crossfit” gym) where he coached part-time. Both participants were instructed prior to the interview to think about situations and episodes that were memorable and formative, and issued with the consent form (included in Annex 2) by email.

While the participants had indeed thought about prior episodes as instructed, and turned up ready to discuss them, it became quickly apparent that such episodes did not exclusively constitute the basis for the majority of the ensuing discussions. Other incidents of interest quickly arose throughout the interviews, and indeed yielded telling insights of their own. Such incidents or episodes were presented and discussed without the possibility for substantial foresight or preparation on the part of the participant. This

feature was therefore retained, and indeed encouraged, in the main study, during which more free-flowing discussions occurred.

Both interviews quickly attained substantial depth. The first interview with PFT01 lasted a total of 90 minutes. Concentration and focus markedly faded, however, at the 60-minute mark, at which stage saturation was also evident. This was duly taken into account during the second interview, where the deepest probing questions were earmarked for use at approximately 45 minutes in, with the aim of achieving saturation within 60 minutes. The second interview eventually lasted 70 minutes. It was also noted, that duration and saturation depended largely on the participant, on factors such as talking speed, and willingness or ability to discuss various aspects of their thinking. In the second interview with PFT02, for instance, it was noted that he struggled to focus on specific episodes, and instead preferred to discuss his thinking “in general”, describing in detail various set systems and general approaches prevalent in his methods. The opportunity was taken, therefore, to actively explore these systems and approaches, how they were constructed, what they were influenced by, and how they performed and played out in practical or even hypothetical terms. Despite this initially generic approach, PFT02 was nonetheless still eventually able to provide numerous examples of anecdotal yet concrete episodes and situations. This rendered discussion of participants’ thinking “in general” an additional worthy focus for the main sample interviews.

The ability of participants to recall their thinking had been an original concern regarding the suitability of episodic interviews, however it quickly became evident during the pilot study, that this was not in fact problematic. It was originally suspected

that participants' ability to accurately recall the thinking that actually took place during past episodes may directly affect the quality of the data. Participants' recollections may have been altered with hindsight, following retrospective reflections and efforts to make sense of the episode/s. Hindsight, reflection, and sense-making, however, were all noteworthy features during the annotation process and considered wholly relevant to the overall phenomenon of on-the-job thinking. The thoughts participants entertained and described during the interview itself eventually provided ample raw and descriptive data with regard to their on-the-job thinking, regardless of temporality. Any perspectives or angles assumed by the participants, such as the case with the noted difference between PFT01 and PFT02 in the way they described their thoughts, was considered relevant and of interest to the research.

Upon listening to the interview recordings, it became apparent that more leading questions were evident in the interviews than was deemed appropriate. During periods of silence, the interviewer had proceeded with probes and prompts too hastily. It was decided that periods of silence should not be interrupted too soon during the main study, giving participants more time to think and describe whatever they deemed relevant, thus enhancing the authenticity of the data. What's more, where probes or prompts were actually needed, shorter less leading versions would be sought in the main study, such as simple and open "why?", "how?" and "what then?" probes. Following the interview with PFT02, it was also decided that additional angles could be used to initiate discussion on participants' thinking where the recollection of specific episodes did not produce the desired effect. Participants could also be asked to describe something unique about their particular approach to their work, with the aim of yielding

descriptions of anecdotal, yet still concrete, episodes and situations, as was the case with PFT02.

Following the interviews, various open-source transcription applications (*Transcriber* and *GitHub*) were experimented with, however they were found to be rather slow and cumbersome. The faster method appeared to be starting and stopping the audio recorder directly, and, using a set of headphones in a quiet environment, entering the data directly into the open-source word processor application on a net book. Initially, the transcripts were read on-screen, with the intention of using a qualitative analysis software application for the development of annotations. On-screen reading, however, was not considered sufficiently comfortable for suitably in-depth reflective reading of the transcripts, as was required in this study. The transcripts were, therefore, eventually printed out on A4 paper and filed in soft plastic files, and each re-read several times before the annotation process was initiated. Hand-written annotations were made directly in the margins of the printed transcripts.

It was noted that the expression of annotations in the first transcription appeared to influence the identification of similar themes in the second, although new themes still emerged. As a result, the decision was made, that in the main study, reading, re-reading, reflecting and annotating (step two) would be carried out with each transcript in turn, before progressing to expressing themes, clustering, and articulating superordinate themes (step three). At both steps two and three, previous transcripts were re-checked to ensure that themes identified later were not missed, to ensure the findings would be truly representative of the entire sample, and did not favour later or indeed earlier interviews. In other words, a more truly inter-subjective essence of the data could be

uncovered by performing each step across all transcripts in turn, before moving on to more in-depth interpretations and reflections, rendering the final inter-subjective narrative increasingly representative of *all* ten transcripts.

Chapter four: Findings

4.1 Preamble

This chapter articulates a narrative based on the development of themes throughout the first stages of phenomenological analysis (steps two and three), showing how the subthemes, superordinate themes and final main themes ultimately emerged from, and relate back to, the accounts of participants themselves. The findings are organised according to the four final main themes as headings, which were: (1) prominence and influence of concept of self, (2) reciprocity of conceptualising and feeling in on-the-job thinking and learning, (3) on-the-job thinking by interaction, and (4) autonomy of on-the-job thinking. In the final section, the four final main themes are focused on exclusively in more depth, to reveal an *initial* eidetic description of the phenomenon of thinking in the context of OJL.

The narrative is constructed around keywords sourced from participants' own accounts. Double quotation marks are used where text is initially quoted from the transcripts, while single quotation marks subsequently indicate that the participants' term has been adopted as a significant keyword or key phrase for continuing use throughout the articulation of the initial eidetic description. The use of keywords and key phrases ensures the narrative remains true to the participants accounts and, while involving interpretive elements in its construction, still represents an exposition of the essential nature of the phenomenon, based on their own accounts.

In accordance with the five-step research method described in the previous chapter, a final pool of eight inter-subjective superordinate themes was consolidated as a

precursor to the final four outlined above. These were; (1) learning outcomes, (2) conceptualising, (3) sensing, (4) projecting, (5) concept of self, (6) feelings, (7) thinking while communicating (with self and other), and (8) automatic/quick thinking. Illustration 1 (below) indicates some of the perceived interrelationships between the two levels of abstraction, emerging throughout a reflective analysis of the eight superordinate themes, and articulation of the final four.

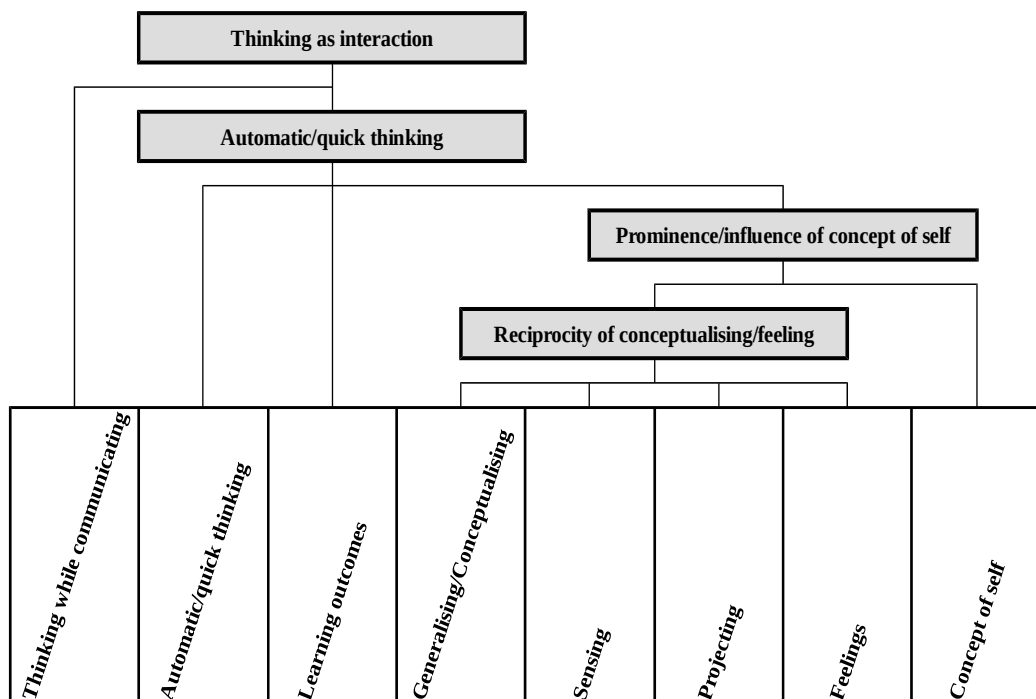


Illustration 1: Emergence of main themes

The first theme presents the prominence and influence of concepts of self. Preference or aversion was shown in the selection of various self-concepts, which acted as guides or blueprints to the thoughts and behaviours of PFTs, and also showed a propensity for change through learning. The second theme is based primarily on the notion of general concepts and the thinking activities aimed at their formation, selection, modification

and application. There was an apparent deep reciprocity between conceptualising, and the experience of various feelings.

The third theme of on-the-job thinking by interaction explores the notion that thinking arose from streams of interactions occurring on a number of levels; internally in the mind between perceptions and preconceptions, internally at an intermediary level between subjects and themselves via self-talk, as well as externally in a situational context between subjects, others, and the environment. The fourth and final theme explores the apparent autonomy of thinking, and based on the accounts of participants' experiences of their thoughts, raised deeper questions about subjectivity, awareness and volition, which are addressed in more detail in chapter five.

4.2 Theme one: Prominence and influence of concept of self in on-the-job thinking

Annotated themes related to self-identity, self-image, and statements about being a particular sort or type of person were prevalent throughout the transcripts. All the participants at some stage or other described various generic conceptualisations of themselves, describing what or who they considered themselves to be. Such conceptualisations were often cited by participants as justification for their thinking and associated behaviours.

4.2.1 Self-concepts and associated outcomes

Concepts of self initially stood out most clearly when PFTs explicitly used various generalised labels to describe themselves, followed by direct associations between those labels and the resulting outcomes in terms of behaviour, thoughts or series of thoughts.

“I'm an introvert so I don't really engage in first conversations.” (PFT08)

The premise of a concept of self in this brief and straight-forward statement by PFT08 is used as a justification for the conclusion that follows. PFT08 essentially suggested that he was justified in carrying out the behaviour of abstaining from first conversations based on the precept that such behaviour is normal for an introvert. Where specific labels were not used, behaviours were instead attributed to, and justified by, being a particular *sort or type* of person.

“I'm more like the sort of a person who is more focused on the application side of stuff. So the more technical things are, the more I tend to be put off...” (PFT05)

“... But at the same time I was always that sort of person who wouldn't give in without doing research and all that stuff.” (PFT05)

“But I am a person that I like to read a lot. I like to read a lot of books that involve a lot of psychology about training and how to win clients and successful strategies.” (PFT04)

“Yes I can specifically say, I'm a person that likes to be part of the leadership team, rather than being led.” (PFT03)

While the participants could have simply stated that they often engage in certain types of behaviour, they instead associated themselves with a particular third-person concept of self, the necessity of which is arguable in the case of a first-person thinker. Sets of expectations were additionally associated with each self-concept, like a guide or blueprint. PFT03 considered himself to be a perfectionist, and proceeded to describe a series of expected behaviours he associated with the guide or blueprint implied by that particular self-concept.

“I'm a perfectionist. That's one of the main reasons, I'm a perfectionist. I'm there to help you get results. I'm not your father or your mother. I had that perception. It doesn't matter if you have to lift pink weights or you have to lift 100kgs. I'm going to get you doing it the right way, the perfect way, as long as we get results and win, I always was that kind of trainer.” (PFT03)

Being able to possibly assume the role of a mother or father when one is obviously not actually a mother or father in the context in question, similarly shows how certain roles possess such an abstract and conceptual nature. PFT10 similarly described the roles of friend and teacher as concepts with their own expected and insinuated behaviours.

“Well you kind of need to be a friend but at the same time you need to be a teacher.” (PFT10)

In terms of their structure, concepts of self ranged from simple apparently singular units to more complex structures. PFTs showed that they were able to combine various aspects of different roles into a unified model guiding their thoughts and behaviours. This guiding model could then be applied in given contexts either temporarily in the case of role, or more persistently in the case of personality or character. PFT04 described the role of a PFT as a composite of aspects of many different roles associated with other professionals, which together formed a useful composite guide to thought and behaviour.

“So I realised that a personal trainer over the years has to play many different roles. To what sense? First of all a coach, that is a very important part of it, but in all facts, for example we have to be a good listener, we have to be a good speaker, we have to be advisor...” (PFT04)

More persistent approaches and behaviours like determination and the desire to help others were likewise attributed to more lasting concepts of self, in this case described by PFT04 as *character*.

“I'm a person who doesn't like failure. I don't like to achieve failure. And everything I want I will do my best

to achieve it, but if I fail, if someone tells me that I've failed or I've done a mistake, I take it very personally. I take it very badly. That is my character.” (PFT04)

“What I do believe about my character is that I am a good listener and I like listening to people. Because I'm a person that I love to help people, and make their life better. I like to make lives better. I like to see people happy.” (PFT04)

PFT03 described the integration and adoption of various aspects of sub-ordinate role-based self-concepts typically used in temporary contexts, into a more persistent composite higher-order self-concept, essentially illustrating a transferability of concepts aggregating role and personality.

“For me I learned a lot and transmitted it to my real life, and those key elements that I mentioned, motivator, good listener and so on and so forth, it helped me to become a better person. So it's become a passion, it's become my job, yet again it developed me as a person.” (PFT03)

4.2.2 Selection of self-concepts

PFTs were motivated to achieve certain self-concepts and equally reluctant to adopt or be associated with others. PFT12 described two versions of oneself existing simultaneously inside each person, one a “coward” and the other both responsible and successful. He eloquently referred to these abstractions as “echoes” inside oneself, stating that people were responsible for choosing which to “follow”.

“At the moment they are inside you at the same time. But I think... in past experiences you face these two echoes in yourself, and you choose which one to follow. And when you choose to follow the one of responsibility, you know it's going to be worth it...” (PFT12)

While considering himself an introvert, PFT08 illustrated the aspects of choice and preference in 'following' various prospective self-concepts by recognising and actively aspiring towards the thoughts and behaviours associated with the opposite self-concept; that of an extrovert.

“So one thing what I've learned is I need to be much more of an extrovert in the sense that I need to come up with subjects and topics for me to know the client better, for me to engage with the client even better.” (PFT08)

PFTs were similarly able to clearly describe concepts of self and associated behaviours to which they most definitely did *not* aspire. Several participants explicitly stated which types of trainer they did not want to be, attributing qualities such as passivity or excessive discipline to the unwanted self-concepts.

“Forget it, I'm not the type of trainer that I'm going to tell you, “Oh, OK you're right, you're too weak to do that.” I'm not going to be... I'm not that kind of person. I'm not that kind of trainer.” (PFT03)

“I'm very disciplined about my training but I'm not the Sergeant type person that I would shout in your face to do an extra two repetitions. I will encourage and motivate but I will not force you to do things that you're not supposed to do.” (PFT04)

“I can deal with such people now, but no I don't want to be the kind of extrovert that says everything and spills the secrets and everyone knows everything about my life...” (PFT08)

As the interviews progressed, the emergence of self-concepts as an influential theme was evident, and the opportunity taken to probe deeper. Some of the participants were indeed able to clearly articulate certain self-concepts. When PFT07 used the term “macho” for instance, he clearly defined some of the qualities he associated with the abstraction when duly probed.

“More masculine, more reliable. More... laid back in a sense, not necessarily relaxed but, like... more observant, like with a brighter view on the situation, more capable to make a decision, more capable in a situation to evaluate as many factors as possible, more capable to react, fast and proper, and not really emotional.”
(PFT07)

After establishing the basic tenets of the concept of being “macho”, PFT07 was further probed about the usefulness of 'following' such a self-concept. He provided a similarly detailed account concerning the relevance of “macho” and more “feminine” self-concepts in various situations.

“I mean it's not a standard in life, we're not at war, we're not in the woods. I say it very generally and the answer I'm going to give you is going to be very general as well. I don't know if it actually answers your question. In different situations you can be, and I believe you should be, much more gentle and much more understanding, and much more aware of people. And then in other situations you have to be much more self-driven, and much more masculine, and much more... instead of evaluating others, suppressing others in a way, or overcoming others, or putting yourself first. And so this is what I call a bit more of a macho generalised behaviour. And different situations require a different response. It's not just black and white, you can't be... ‘Oh I want to be in contact with my feminine side...’ Sometimes it's needed but sometimes it's needed to be more in contact with your male and masculine side.” (PFT07)

The tendency of participants to attribute patterns of expected behaviours to generalised self-concepts occurred both in their descriptions of themselves, as well as of other people. PFT03 labelled one of his clients as an “immature boy,” and was not surprised when the expected reactions and behaviours associated with such a self-concept were subsequently exhibited by the client in question.

“... He was a very still immature boy, he had still to make that gap from a boy to a man. He had difficulty hearing what he needed to hear. If you confronted him with what he was doing wrong rather than being independent and responsible, he would be offended.” (PFT03)

PFT07 also made a direct reference to the existence of a concept of self and its essential nature, in his description of a particular gym member, creatively describing it as a “drawing” in the mind.

“... I kind of figured him out in my mind. I mean you never know who is in front of you or against you, fully, but basically I had a drawing of him in my mind, I know what a creature I have in front of me.” (PFT07)

If ‘followed’ self-concepts acted as blueprints or guides, causing recruitment of additional sub-ordinate concepts and cascades of expected thoughts and behaviours, then according to participants’ accounts, such a system appeared to govern expectations of thoughts and behaviours during interactions between multiple persons. This resulted in the quick and efficient formation of boundaries or terms and conditions governing such ensuing interactions. PFT04 described a relationship with a client that had, up until that point in time, been considered “normal” because it had conformed to the

relevant expectations, boundaries, or terms and conditions implied by the conceptually typical relationship, in this case, between a client and a trainer.

“And there were no feelings in particular towards this client, it was just a client and person I would say, client and trainer, she was just a very normal client.” (PFT04)

In other words, expectations and boundaries enabled the recognition of acceptable or unacceptable behaviours. Indeed, the expectations arising from interaction between specific self-concepts in a given context were used by PFTs to justify certain behaviours. During one of his described episodes, PFT03 felt somewhat let down by his manager. The manager's actions however were deemed acceptable only when considering the self-concepts being 'followed' by each stakeholder at the time and their associated implications, because any manager could hypothetically be expected to carry out that same behaviour in the same context.

“... My manager, even though I was right, he had to warn me, because the client put pressure on him.” (PFT03)

Due to the manager's commitment to his role-determined self-concept and associated expected behaviours, his actions were thereby justified, and should not have caused offense, as indeed they did not when PFT03 conceptualised the interaction in this way. He reinforced the importance that these roles should, throughout the course of a PFT's work, be kept “in mind”.

“I thought he was going to come to me and tell me, ‘Listen [PFT03], we know who this person is, and I know you wouldn't do that, don't worry.’ I was expecting something like that, because this person knows me, he

used to work with me all the time. But when it comes to business I learned my lesson. It's not about friendship, it's not about anything, it's about manager and instructor, or a personal trainer and a client. You have to keep that in mind.” (PFT03)

Knowledge of which self-concept and associated behaviours or “approaches” to ‘follow’ at any given time was actually considered by the participants to be an important ability for PFTs. PFT05 discussed the importance of knowing which sets of behaviours to ‘follow’ based on the self-concept attributed to those with whom they were interacting, shaped in this particular statement by background and profession.

“... Even the type of professionals who come in, I get students and I get lawyers, once I had a magistrate, so the kind of approach has to change a bit.” (PFT05)

PFT04 clearly described his ability to slip in and out of such roles at will, showing how ‘approaches’ can be quickly modified with relative flexibility when ‘following’ concepts of self as guides.

“... When I move into that studio there's that fine silver line when I just move in, and I switch. I mean inside work it becomes different, I'm always the trainer, and there's always the client. So I don't go personal on anything, it's always been like that. ” (PFT04)

Choice among self-concepts was also influenced by how PFTs wanted others to see them. PFT04 explicitly stated how his ‘approaches’ with clients were selected and motivated in part by a desire for others to regard him as a good and honest person, despite this sometimes resulting in certain practices he knew to be flawed.

“So that I feel that I'm OK, he's a good guy, you know? He understands. He's the understanding type, rather than he's the greedy type. I always wanted to look for the understanding rather than the greedy. And I do know that I am not greedy, but when it comes to business I sort of suffer on these little things, because, again, this is where I let off many cancellations.” (PFT04)

4.2.3 Self-concepts and change

The self-concepts that PFTs were able to choose and apply were not fixed or immutable. According to the participants' descriptions, *conceptualising* included thinking activities aimed at updating or changing these concepts, showing the propensity for change through learning. PFT04 described a gradual evolution of his understanding of the role of a PFT over time.

“I used to look at a personal trainer as someone you're going to go to if he wants to get fit, he wants to get in shape, and the personal trainer is going to deliver that. Over the years it changed. I started to see that personal training is not just a product, you don't deliver a product, you are giving a service. But the service is a very vast service.” (PFT04)

The thought activities involved in creating, modifying, selecting, and otherwise using or applying concepts, both generic as well as pertaining to self, were seen to occur in a reciprocal fashion with another prominent emerging theme; that of feelings and feeling states. The relationship between conceptualising and feeling according to participants' accounts is presented in theme two.

4.3.4 Summary of theme One

One of the most prominent themes emerging from the transcripts was the concept of self, which was used as a form of blueprint guiding thoughts, behaviours, and ‘approaches’. Specific concepts of self, to which PFTs actively demonstrated aspiration or aversion, also involved the recruitment of additional sub-ordinate concepts and associated expectations from self and others in various contexts and situations.

Self-concepts were 'followed' transitorily when fulfilling temporary roles, or more persistently in the case of personality or character. Self-concepts were not fixed or immutable, and showed a propensity for change through learning.

4.3 Theme two: Reciprocity of conceptualising and feeling in on-the-job contexts

The first stage of explication had yielded numerous annotated themes related to thinking activities describable, in the tradition of Bloom's (1975) taxonomy for describing learning outcomes, using action verbs, which transpired to be inter-subjectively consistent. PFTs repeatedly described similar instances, applications, and examples of their on-the-job thinking, resulting in super-ordinate themes dedicated to thinking activities describable using action verbs, which eventually yielded three of the final set of eight, designated conceptualising, sensing, and projecting respectively.

Conceptualising was the largest of the three, and is presented first due to its apparent centrality in participants' descriptions of their thinking. The constituents of this specific cluster included such thought activities annotated as generalising, categorising, contextualising, and any other operations dedicated towards forming, adapting, updating or otherwise applying general concepts (including concepts of self), as discussed in the previous section.

4.3.1 Conceptualising

Singular or clustered combinations of general concepts initially emerged from the transcripts when PFTs made repeated references to set beliefs, systems, approaches, and schools of thought. General concepts, including those related to self, were useful for PFTs in their capacity to facilitate the quick and efficient selection and application of plans and approaches in multiple situations with various clients. The ability to do this was indeed specifically nominated by PFT04 as a crucial part of a PFT's role.

“That person who walks in the door [the PFT] must understand what he's coming from, where he's coming from, the social class, how he should be treated, even the fact if they have a simple condition, whether they're obese, whether they're overweight or they have a certain condition, you've got to treat them with a certain care.”
(PFT04)

Established schools of thought and training styles constituted useful ready-made ‘approaches’ for PFTs in multiple contexts, representing preconceived models into which various perceived variables related to the client could essentially be plugged. PFT03 affirmed his preference for 'following' “functional” training specifically, which represented a blueprint for the selection of certain types of exercises when planning sessions and programmes, namely the inclusion of exercises based on movements most relevant in the context of daily life or sport.

“We all know the benefits of free-weights over resistance machines, and we all know of the importance of compounds (movements recruiting more than one joint/set of joints). Now I was always obviously a firm believer in compounds, and functional training and how it benefits into posture and so on and so forth...” (PFT03)

PFT10 also indicated her preference towards this same style of training. Within its framework, she included a further set of three categories of exercises when planning her sessions or programmes, defined according to their mechanics or metabolic effects. A general concept, therefore, was combined in this case with additional concepts, creating a more complex clustered pattern that included concepts of a “tri-set” (combining three exercises together with no rest between), pushing exercises, pulling exercises, and

“pulse-raisers” intended to increase heart rate and produce a cardiovascular training effect.

“Well I like to work with functional training mainly. I do a lot of... I wouldn't call it tri-set... I would usually... I like working with three movements, one of three movements; pushing, pulling and some sort of pulse-raiser, and swap them around depending on the person, and I just like to work with different... full-body exercises...” (PFT10)

She later described this system as existing “in (her) head,” and described her ability to, “play around” with it in order to generate different combinations as required. PFT11 similarly described her use of a relatively complex arrangements of concepts when planning yoga sessions, involving “themes” applicable to the various phases of the session, and drawing on a “library” of poses or movements. These concepts essentially provided the preconceived tools needed to construct individual sessions and programmes without the need for considerable time or effort spent planning.

“There are certain themes that you need to include to make it a holistic class. So with that there is a library of poses that you can do within beginning, middle, and end part. And if for example you're working towards a peak pose of a challenging arm balance or something that requires a lot of opening through your hamstring then you do a lot of poses to prepare for that.” (PFT11)

PFT07 made direct reference to the general concept as a guide by defining it as a “main idea.” He continued to explain that with a suitable 'main idea' in place, thoughts and behaviours would naturally follow, typically proceeding to “fit in” like a “chain reaction” according to whatever “guiding principles” were used.

“Everything else for me just follows. Meaning, it's just in the background, just follows the main idea. If I teach them to follow basic principles, even when it comes to nutrition and moving and training, everything else just fits in like a chain reaction. That's how I see it.” (PFT07)

The term 'chain reaction' elucidates the interactions PFT07 visualised between the concepts comprising given clusters or configurations associated with selected 'approaches'. Such 'chain reactions' were also evident in the participants' descriptions of selection and application of various temporary and more persistent configurations of self-concepts. 'Basic principles', therefore, were not only limited to exercise prescription in the technical sense, but governed thoughts and behaviours on a more overarching level. PFT03 attributed his tendency to engage in specific types of more persistent behaviours to a selection of general guiding principles and values which were also influential to his concept of self.

“I always liked to help everyone as good as I can, but that was a principle of mine. And growing up, whatever I did I always wanted to transmit that. It's a principle I keep nowadays, and it's irrelevant of the client who it is, hard client, easy client, an athlete or what not, I try to give them the best service that I can. And I hate cheating. I hate cheating. And I hate injustice, and that is something, part of my character, part of my principles.” (PFT03)

PFT07 similarly discussed the notion of values as general concepts guiding his thoughts and behaviours by explaining how he would attempt to observe the “method” underpinning certain behaviours in others. Over time these 'methods' could eventually be incorporated into a personal guiding value system.

“I see good examples and good behaviour and proper, if I can use the word, behaviour, and I try to learn the method, the ways behind that behaviour. But, it's a mixture, how did I start valuing these? It's a mixture of what you've seen while you were building up your values.” (PFT07)

PFT07 further developed the notion of 'chain reactions' of interlinked configurations or clusters of concepts when he used the term “moral compass,” and was immediately asked by the interviewer to clarify its meaning. He made a comparison between the two general concepts of the 'moral compass' on the one hand, and “metabolism” on the other. Metabolism is a commonly-used term by PFTs that broadly describes the chemistry of energy-flow through living systems. The two terms are only similar in this context, inasmuch as they both involve a number of different “processes” interacting with each other in a relatively complex way. The 'moral compass' was presented by PFT07 as a general concept significant in its influence over his ‘followed approaches’, consisting of many other sub-ordinate concepts interacting in a way that resembled a 'chain reaction'.

“Well I believe everyone has one of these. It's affected by, you know, the values society has, the values the family has, if there was a family. It's affected by experiences. It's affected by social circles, and it's a bit like basal metabolic rate, right? A lot of trainers like to say, 'We will speed up your metabolism...' as if metabolism is one thing. Metabolism and metabolic rate is a whole... you know... it's not one thing, one creature, it's a combination of so many events and so many processes, and this is pretty much it. The compass is not one thing it's not one object, it's a unification of so many processes.” (PFT07)

By means of this narrative, PFT07 essentially elucidates a discernment between standalone concepts and clustered combinations of concepts, be they fractal or non-

hierarchical in the manner in which they are sequentially or simultaneously recruited. Incidentally, given that the issue of metabolism was raised, any system to which only a finite amount of energy is made available at any given time could reasonably be assumed to benefit from a tendency towards efficiency. The tendency of general concepts to guide ‘approaches’, facilitating action without the need for excessive time or energy invested in deliberating action plans that have previously been worked out in similar contexts, is indeed characteristic of an efficient system. Implications of the tendency to generalise by conceptualising are discussed further in chapter five.

While the ability to act quickly and efficiently might be generally desirable in many contexts however, other situations might otherwise benefit from further deliberation. If general concepts are, therefore, influential to thoughts, behaviours and ‘approaches’, and efficiency is a factor influencing their selection, then inappropriate or undesirable actions may very well result in situations where further deliberation would have in fact been more beneficial. If efficiency does not necessarily lead to the most desirable outcomes, then questionable outcomes could also reasonably be expected from PFTs’ descriptions of their on-the-job thinking and learning.

“I learned that the client sometimes does these things to get attention, or maybe wants a free membership or maybe he wants to get something for free, which I think was the case at this point in time.” (PFT03)

In this statement, PFT03 described an outcome arising from a memorable learning episode which, regardless of the validity of the conclusion drawn, led to the formation of the generalised concept that clients sometimes complain for dubious reasons. Subsequent quick and efficient selection and use of this concept and its associated

suspensions of clients' intentions in future cases could result where such intentions were in fact genuine, also possibly adversely affecting further resulting learning outcomes. PFT10 presented the general concept that male clients sometimes “look down” on female trainers, and showed how this may have been influential to her perception of a particular client during an episode which itself ended up further reinforcing the concept, regardless of its actual validity.

“And basically I found it hard even to just talk to him, because he seemed to look down on me, he was older than I was. Maybe because I was a female and he was a male, it's usually the issue... (laughs)” (PFT10)

Factors influencing on-the-job thinking and its outcomes, be they desirable or otherwise, were prevalent in participants' accounts. In this respect, a particularly significant superordinate theme emerging from the transcripts inferred a deep reciprocity to the act of conceptualising, namely that of feeling and feeling states.

4.3.2 Feelings

The interviews conducted for this study were based initially on discussions of memorable learning episodes, and principally sought to elicit participants' descriptions of their thinking, specifically. Despite the primary emphasis being placed on descriptions of *thinking*, participants consistently described how they *felt*. Given the semi-structured nature of the interviews, participants were afforded freedom to discuss whatever aspects of their thinking they deemed important. When largely unsolicited descriptions of feelings eventually comprised a prominent super-ordinate theme,

therefore, feelings were considered to be a significant factor in PFTs' described experiences of thinking.

To establish a working definition of feelings, and to clarify the stance assumed by the researcher in the explication of this theme, the cluster included annotations based on instances of participants' awareness of the experience of a specifically defined sensation. This awareness on the part of the participants could also attend to more generally defined affective and influential states of consciousness not directly arising from cognition or volition, such as happiness, fear, anxiety, or embarrassment, among others. Baron similarly defined "emotion" as a "state that is subjectively experienced" (2008, 67). For the remainder of this chapter these specific and general states are cumulatively and broadly summarised and termed simply as, *feelings* (or *feeling states*).

Feelings initially stood out most clearly in PFTs' descriptions of high-stakes or emergency situations. During her interview, PFT06 described several emergency high-stakes situations, the first of which occurred in a clinical environment when a client with health challenges lost consciousness and collapsed while walking on a treadmill machine. Following the incident, which was resolved when medical staff arrived on the scene and revived the client, PFT06 offered a detailed and feeling-rich description of her reactions, including references to both physiological and non-physiological phenomena.

"The state of adrenaline that you're in that tense state, so I was in that the whole time, and once she left that's when I sort of sat on the treadmill and I was, 'Oh I can't believe that just happened,' cried that I was relieved she was OK and relieved that I helped her, and relieved that I didn't do anything wrong." (PFT06)

“It was terrible, I felt terrible as well, I felt really bad for her. I felt bad that this happened, I felt bad that she's got this condition. That was while I was sitting on the treadmill I felt so sorry for her. My heart went out to her. I felt so much empathy for her, definitely. I felt so sorry for her. Because she was in that state, she was like that...”
(PFT06)

PFT10 also mentioned some very specific physiological characteristics of a particular feeling she had experienced. When asked to elaborate on her reference to feeling “insecure”, she also introduced the notion that feelings occurred in “grades” of magnitude or intensity.

“Like I'm hungry? (laughs) You know when you're hungry and you get like, this feeling, there? (gestures towards abdomen) Like I'm nervous but I'm anxious at the same time. Like a combination of both. I have it now. (laughs)”

“It's not always that bad. There's different grades of it, right? So there's just a small awkward thing...” (PFT10)

In terms of magnitude, various other high-'grade' feelings were definitively reported by PFTs. PFT04 explained how a female client had sought support from him after claiming to have sustained domestic abuse by her husband. After following up on such a plea, and duly receiving a direct phone call from the husband, PFT04 described such high-'grade' feelings, and stressed the degree to which the experience had constituted a strong or vivid memory.

“And I felt, I felt these palpitations, and he's like, 'Listen don't text a married woman at this time of the night, it's not professional...’ And I'm like, 'OK I was speaking to

(the client) not to you...' And the phone just ended, the phone was just cut. And I remember the feeling as if it were today, I remember I felt a lot of palpitations, I was very scared, because I knew that this guy knew me."
(PFT04)

PFT05 described similarly high 'grade' feelings in response to being informed of his impending receipt of official written communication demanding that he ceased from various public activities and engagements due to his lack of membership with a particular organisation that held various legislative powers. He also described how vividly he was able to recall the exact moment in particular detail.

"I still remember the day, the date, everything like... I was shell-shocked, I was like... OK but let me wait for the letter, let me see the letter. First you are anxious like, you can't wait for the email to arrive." (PFT05)

Feeling with a high 'grade' of magnitude in these cases occurred simultaneously with the formation of strong and vivid memories. In terms of dimension, in addition to magnitude, feelings were also experienced temporally by PFTs, who described the tendency of some feelings and lasting feeling states to persist over extended periods of time. Following the phone call from his client's husband, PFT04 reported feelings of fear remaining "stuck to (his) head" for up to three months.

"So I think it stuck to my head for at least three months. I was terrified for the first week, but then I kept saying, 'This will come to me, this will come to me...'" (PFT04)

PFT05 similarly described feelings of anxiety, resentment, and bitterness lasting for a period of up to a "couple" of months, constituting an overall "painful" experience.

“And for the next couple of months I literally... this issue literally took over my life I was looking at what other people were doing and complaining that he is also doing that why don't you also pick up on him? Why can this sports person post this particular post and this person do this job? And it got so complicated and I got so anxious about it that literally it was a painful experience.”
(PFT05)

PFT03 also explained how a particular episode which had resulted in an official warning from his superiors had resulted in residual feelings of anger that persisted for up to a week.

“Well at that moment I was young and it was a case of anger management because I needed to control my anger, because obviously I was angry as well. It lasted quite a lot because I had the warning. I wouldn't remember how much specifically as a time-frame but let's say a week maybe.” (PFT03)

The experience of feelings of high-'grade' magnitude or persistence was associated with the consolidation of vivid memories, but also with prompting a drive to learn and change. For PFT05, a very negative experience involving intense feelings of anxiety and even terror, served as a prompt to make fundamental changes in his approach to his work.

“And back then I was like, terrified, because you're like OK so this is where my career stops, I need to change things...” (PFT05)

“It made me feel like, anxious, angry, and at the same time motivated to say listen, there must be a way, these people must be doing something that in some way or another is getting them out of trouble, or is getting them good business all the same.” (PFT05)

PFT03 nominated the feeling of being disrespected as an active prompt during a situation he had originally selected for discussion as one of his most memorable learning experiences, and from which he explicitly cited various specific learning outcomes. A relationship thereby appeared between feelings and learning outcomes, both questionable and sound.

“OK... my first thoughts and feelings... to be honest I was... well... you know... you're in front of all the people and she's talking to you that way. I felt disrespected. That's my first reaction. How could she talk to me this way? In front of all these people...” (PFT03)

Of increased significance, therefore, was the potential of PFTs to manage such feelings. Through his reference to “anger management,” PFT03 essentially expounded the enterprise of feeling-management. PFT05 similarly described his experiences with managing feelings of anxiety. He described such feelings as “rainstorms”, together with a practical strategy he used for effectively dealing with them.

“So basically when this thought goes through, it's just like at the moment it's raining, I'll just wait for the rain to stop, once it passes, it's done. I won't be going outside trying to wave my umbrella in order to remove the clouds and all that stuff, I'll just wait for the rain to pass and I'll just move on from there. And that one trick, the simplest of tricks ever, I think has been the most beneficial part of getting out of that.” (PFT05)

PFT10 explained how she would manage negative feeling states she would happen to be experiencing before the delivery of scheduled exercise sessions. Her feeling-management strategy was based on immersing herself in a particular routine, helping

her to enter a preferable feeling state more conducive with effective delivery of the session.

“I distract myself from that feeling, so I try to just get into the... if I'm downstairs (gestures towards the studio located on a lower floor) I just start to write the workout down, put the music on, and do anything to stop thinking about that particular thing that's making me feel crap at that moment.” (PFT10)

Feelings and feeling states were also seen to affect the outcomes of on-the-job thinking in the context of small to large-scale decision-making. PFT11 described feelings of trust that served to validate her large-scale choices in her career and life.

“I feel very trusting to life, or that I'm at the right time doing the right thing. Yes, I just feel very trusting to what I'm doing and where I'm at.” (PFT11)

PFT03 explicitly stated that while being a PFT might not be considered a sensible choice in terms of prospective financial prosperity, social status, or indeed other factors one might consider during a rational or logical decision-making process with regards to career, he nevertheless chose the profession based on his feelings.

“... Society tells you, be a lawyer, be a doctor, be a whatever... They never tell you be a personal trainer. But me being a person of leadership skills, I don't do what people tell me to do. I do what I feel, and I always loved this industry, and I always loved sports and I always loved helping people.” (PFT03)

With respect to financial viability, PFT05 admitted to having started out in the industry under conditions that were untenable. He nevertheless persevered because he was motivated exclusively by a feeling he termed “passion”.

“So I was literally going round the country working just through passion (laughs)... because the few money that I used to make used to be spent on petrol and all that stuff, so it wasn't that worth it.” (PFT05)

If feelings occurred in ‘grades’ of magnitude and persistence, and influenced PFTs’ thinking in a number of ways, including during decision-making processes, then the latter instance shows how participants directed their feelings towards concepts in themselves. This was further noted in their described acts of upholding or defending certain beliefs, and their faithful commitment to certain schools or thought. Such directedness of feeling and loyalty resembled approaches one might expect towards tangible objects or even people. Three of the ten participants reported attachment or subscription to concepts or sets of concepts sufficiently great to warrant changing jobs, directly citing differences in ideas, beliefs, and approaches as the reason for not being able to work with certain other professionals. PFT04 described starting work at a particular personal training company, only to leave shortly after due to a difference of ideas.

“I did start off a few sessions with him but I couldn't... we didn't share the same idea, the same concept. So it was like, I thought one way, and he thought another way. So we sort of, 'Listen (head trainer) it's best if we just...' you know? It was a very short while, I spent about a month with him max, and then I started doing something by myself ... So I said, 'Listen (head trainer), I'm taking my clients, I'm just going to leave...'” (PFT04)

PFT07 similarly described how upon identifying a particular system in operation at a studio he started to work at, he decided to move on, citing a difference in “philosophy” as his motivation.

“I wasn't really happy with the way things were done there so it was a very short experience. Still it taught me about personal training, but I wasn't really happy with the philosophy of the company...” (PFT07)

The tendency of participants to 'follow' and exhibit attachment towards concepts was most prominent of all in their descriptions of self-concepts specifically. PFTs described numerous examples of upholding their ideas about who they thought they were. Following the incident where PFT03 felt disrespected by a club member, he exhibited concern that his 'followed' concept of self was under threat.

“... That put me in a place where it jeopardised the way people look at me, my image in the fitness centre.” (PFT03)

Incidentally, PFT03 also exhibited concept-attachment via a conflicting philosophy with that of his superiors. He showed a desire to uphold, and a commitment towards, both his 'followed' concepts governing exercise prescription, as well as that of self. The prescriptions he actually proceeded to make, incorporated conflicted ideas with those of his superior, and essentially conformed to his self-based concept of being a “good trainer”.

“Perhaps at that moment in time I didn't think about perhaps the manager wouldn't be happy with me and I might be fired, but I looked at myself as a good trainer.” (PFT03)

PFT05 also described an instance of his concept of self under threat, and the associated feelings this generated when he was ordered to stop carrying out a particular aspect of his role. He described how feelings of self-confidence had been invested in that aspect of his role, and that feelings of anxiety resulted from having it taken away.

“So basically what happened was, I felt so bad like someone was stealing the thing I love the most in my life. And apart from that they were like, putting me under this... disqualifying me, if I use this word, for what I'm doing because they were like, 'Listen in order to do this and do that, you need to be a registered (role omitted for confidentiality),' and they were like, 'Listen you cannot do that because you are not qualified to do it.' So even your self-confidence and your self-esteem takes a big knock, and you start acting very anxiously, even in my work...” (PFT05)

The directedness of such feelings towards abstract concepts showed the pervasiveness of feelings as integral to the process of conceptualising itself. The experience of thinking described by the participants was difficult to reduce solely to rational thinking in a pure or isolated sense. It included rather a more subtle and underpinning contribution of feelings at a fundamental and embedded level in the selection, modification, and ultimate use of concepts. PFT08 admitted how he felt comfortable with what was familiar to him, and uncomfortable with that which was unfamiliar, in terms of the clients he favoured.

“I never used to speak to the women. Because I used to be really shy. So even if it was an 18 year old or a 60 year old, I never used to speak to the women because I was really shy. So it was always the men I kind of, went to, because maybe I felt more comfortable.” (PFT08)

When perceptions of behaviours and outcomes proceeded according to expectations, essentially matching and validating preconceptions, resulting feelings of confidence, happiness, or even amusement were reported. PFT07 explained his reaction when a member behaved in a way that matched the self-concept he had attributed to him. While observing the person carrying out the behaviour in question, the instant a match took place between the perception and ascribed concept of self was experienced specifically as a feeling of amusement. He went on to further state that he would have most likely experienced a feeling of surprise had a mismatch instead occurred.

“I see one of the bodybuilders in the gym, one of the biggest and most, you know, with highest self-esteem guys in the gym, he goes and he starts chatting up with her, OK? And I didn't say anything, I actually found it funny.”

“I do like the guy, but I see him as the guy he is. I don't mind him, I mean I would actually be surprised if he didn't approach the client. I assumed in advance, although I don't like assuming, it's like again, an educated guess, you can put it as an educated guess that he would actually, yes, approach her at one stage or another.” (PFT07)

PFT05 described a distinctive feeling of “déjà vu” upon making the match between practical observations, and concepts he had previously learned theoretically in his studies. The description he gave of this particular accenting feeling indicated his experience of it was a positive one.

“Especially when you learn something like that then it likes, flashes (snaps fingers), like a déjà vu, 'Ah I heard this somewhere! I studied this, why he does this like that...' (laughs)” (PFT05)

Where on the other hand perceptions contradicted existing concepts, resulting feelings of surprise, shock, or confusion were reported. This mismatch of perception with preconception, and the associated feelings accenting it, also occurred in tangent with the formation of relatively vivid memories, allowing the participant to recall recent episodes exemplifying it. PFT08 described a feeling of surprise and uncertainty when his client made a seemingly forward or overly friendly comment, that did not fit with the conceptual implications and expectations governing the particular situation and relationship.

“I would say not shocked, but surprised that she said such a thing. I mean it's not the sort of thing that you would say to someone, to your coach, really. Even though you build a rapport over maybe two or three months, I don't think it's the sort of thing you say to someone, no?”
(PFT08)

PFT07 described more diverse interactions between perceptions and preconceptions following a particular member behaving expectedly, thus causing a match and resulting in a feeling of amusement, only to be followed by another “type” of male repeating the same behaviour in question with another “type” of female, this time causing a mismatch resulting in a feeling of surprise. What's more, the feeling of surprise was of sufficient magnitude to facilitate the formation of a relatively vivid memory, ultimately permitting him to recall the episode for the purpose of the interview.

“... The first guy was a bit of a, you know a bit of a macho guy, a bit of a... you know, a high self-esteem and show-off type of guy, and the first girl was much more, attractive than the second girl. So I figured, alright, I guess this is how... I guess this is normal for her, you know? I guess this is how it happens. But then when it happened to the second girl as well, it was like, a different type of guy and it was a different type of girl,

*and I just figured, just as long as you're a girl... (laughs)
there will be a guy in the gym trying to bug you..."*
(PFT07)

PFT07 further developed the theme of mismatching perceptions and preconceptions in particular, by describing unfamiliar phenomena as “scary”. He later discussed preference to the familiar and aversion to the unfamiliar by means of a more generic issue, in this case, racism.

“So everything that is out of the box and out of the ordinary tends to scare off a lot of people. I'm not saying it is going to scare you in particular, but it tends to scare the mass.” (PFT07)

“Why a lot of Western Europe are afraid of the refugees now? I know it's away from the subject but why are they afraid of them, why do they see them as a threat? Because it's something you don't know about, it's something you have a blurred image of and it's... you compare. You know your neighbour who is much closer to you, much similar to you, and you don't know this one who is different, who is in your eyes much less reliable, who is much less civilised in your eyes. We compare, we do compare all the time. I'm happy with my comparisons I believe they do me more good than harm. I compare a lot, people, training methods, training techniques, everything.” (PFT07)

The unfamiliar was referred to by PFT07 as something of which one has a “blurred image”, highlighting not only the imagistic nature of the experience of certain concepts, but also the notion that such images can exist with varying degrees of clarity. The mismatch between perception and preconception, therefore, may be the result not only of absence or difference of an existing concept, but also to its lack of clarity.

PFT04 portrayed his experience of the mismatch between perception and preconception together with the associated resulting feelings, as a prompt to learn and change. When something went “completely against” his opinion, he described how he would be prompted to reflect, with a view to updating his preconceptions, and ultimately learn.

“I believe that if I made a choice it's the right choice, because it felt that it was right. If I give an opinion I feel that it was a very strong opinion as well. So when something goes completely against it I feel like I'm just shutting down out of the system. And then I sit down and analyse, what have I done wrong? I analyse and then I say OK that is where I went wrong. So I apologise if I did something wrong or, listen, that's where I start saying, OK I made a mistake, now it's time to analyse and try to bring things outright.” (PFT04)

While negative feelings accented mismatches of perception and preconception, positive feelings accented the matches, reinforcing and encouraging the PFT to actively seek out and facilitate such matches. In other words, if matches were pleasurable, then subjects could reasonably be expected to be driven to facilitating experiences of them. While familiar preconceptions were selected based on their similarity to perceived experiences, therefore, PFTs also predictably described instances of actively seeking out and selecting those experiences and associated perceptions that represented the best fit for their prominent preconceptions, explaining participants' preference for the familiar. PFT07 clearly described his tendency towards clients who represented the best fit with his existing and readily available preferred general concepts, describing this as “natural”.

“I'm actually feeling more comfortable training men with similar goals to mine, similar body composition, similar even experience to mine. I guess it's just natural, these

who are closest to me, my goals and my way of training, these I find them the easiest.” (PFT07)

PFT05 described positive feelings associated with the success of an applied concept, serving as further validation of that concept, and in turn generating additional match-based positive feelings. This positive feedback loop involving feelings of encouragement and trust eventually led to the concept, “sinking in”.

“It influences me a lot because I think when you trust someone about what they're saying and they ask you to try something out and it works, you're encouraged. You get that feeling like truly this has worked, this must work, this must continue to work, and the more you get that feeling that listen, this is working, on a long period of time, it just sinks in that listen, this is a good method I'm using.” (PFT05)

The notion of concepts 'sinking in' to various degrees would enable an efficient thinking system to prioritise certain concepts over others during the process of comparing perceptions with preconceptions, depending on the degree to which they have 'sunken in'. Such a system would thereby be dependent on the experience of feelings, which in themselves can be experienced in various 'grades' of magnitude and persistence.

A thinking system that seeks to make “connections” between perceptions and preconceptions, and does so using a feedback loop based on 'sunken in' concepts in turn influenced by feelings with high 'grades' of magnitude, would enable thinking to become predisposed towards the preference of certain specific concepts or clusters of concepts over others. This tendency or ability was referred to by PFT11 as “pattern recognition,” which could also be described as a general stance predisposed to attempt to seek familiar patterns. She encapsulated this tendency in a simple statement.

“The longer you do something the more you can recognise different patterns.” (PFT11)

The continuing tendency to actively seek out matches to, and 'follow' those patterns of concepts that have 'sunk in' the deepest, resulted in what PFT12 described as the “comfort zone”. He defined this as the state in which one persistently favours the familiar and fears the unfamiliar, thereby repeating and validating the same thoughts and behaviours, ultimately comprising a state not necessarily conducive with improving and achieving one's goals. Indeed, once new challenges had been mastered or 'sunk in' sufficiently they shifted towards familiarity, thus becoming part of a new and updated 'comfort zone'. After he used the term several times PFT12 was asked to elaborate on its meaning.

“The things that you are already capable of doing. Maybe they were difficult the first time, but now since you overcame that hard situation, for example if we're talking about training you have a particular lift, the first time it was hard even to learn the technique, but now you start to increase and increase your lift and let's say it's a hundred-kilo lift, once it was challenging, but when you keep doing the hundred kilos, there is your comfort zone... it becomes your comfort zone. You can adapt that scenario in everything else in life, I think.” (PFT12)

PFT12 essentially presented a model that accurately described the physiological adaptability of the body to varying intensities of training stimuli. By alluding to psychological connotations and explicitly stating that such a model could be adapted to many other “scenarios” in life, he also indirectly explicates the possibility of the same model governing an efficient thinking system, facilitating the movement of concepts into a 'comfort zone,' thereby increasing their availability and thereby greater thinking

efficiency. The prospective nature of such a system is discussed in more detail in chapter five.

This section has sought to explicate the apparent pervasiveness of feelings in the thinking processes described by the participants. Feelings were interpreted to be essentially embedded in the acts of matching, mismatching, updating, and forming general concepts, serving as catalysts triggering or otherwise accenting, encouraging or facilitating these processes. The reciprocity of feeling and conceptualising in on-the-job thinking is directly alluded to via the following excerpt from PFT11's interview. When she used the term "intuition" and was duly asked to elaborate, her response presented thinking and feeling as inseparable and virtually indistinguishable experiences.

"Interviewer: How would you define intuition?"

PFT11: It's a gut feeling. (laughs)

Interviewer: What does the gut feeling feel like?"

PFT11: It's a yes or a no in your belly.

Interviewer: So you feel it in your belly physically?"

PFT11: Yes. It's the trigger that makes me make decisions and makes me... Yes, take action.

Interviewer: So you trust this gut feeling then?"

PFT11: Yes.

Interviewer: Can you tell me any more about what it actually feels like?"

PFT11: It's a feeling in the belly, so when you ask yourself a question, if it's a fluttery feeling it's a yes, if it's dark kind of anxious feeling it's a no."

4.3.3 Summary of theme two

The accounts of PFTs of their on-the-job thinking revealed prominent use of general concepts in the form of beliefs, ideas, schools of thought, philosophies, or 'main ideas'.

Other additional concepts followed on from the main idea like 'chain reactions' ensuring concepts and arrangements of multiple concepts could span from simple to complex, and serve as useful ready-made guides for thoughts and behaviours. Participants were able to select or 'follow' given concepts in various contexts and situations.

The use of general concepts in multiple situations resembles an efficient system, avoiding the need for excessive time and energy spent deliberating anew in situations similar to those previously encountered. Where deliberating anew would have in fact been beneficial, questionable conceptualising and hence questionable learning outcomes may initially be considered to result from such 'chain reactions'.

Conceptualising and other thought activities employing general concepts did not happen in isolation, but were reciprocal to feelings according to the descriptions of the PFTs. Despite being asked to describe their thinking, participants often described their feelings instead. Feelings could be experienced in 'grades' of magnitude or persistence, promote memory storage and recall, influence decisions, and act as triggers to thinking and learning of outcomes both questionable and apparently sound.

Feelings could be directed towards concepts as though these were tangible objects or people, showing degrees of attachment of PFTs to particular concepts. There was some indication that participants successfully used strategies to 'manage' their feelings, particularly in the case of negative feelings. Feelings were also integral to the process of conceptualising inasmuch as they served to accent the match or mismatch of perceptions with preconceptions, and favour the use of familiar concepts in favour of greater efficiency. This eventually led to concepts 'sinking in,' making the PFT more

able to recognise and perceive those particular patterns, eventually comprising a 'comfort zone'.

Thinking as described by the participants was difficult to reduce to pure rational thoughts alone, with feelings exhibiting a deep pervasiveness, explicating an apparent connectivity and reciprocity between thinking and feeling.

4.4 Theme three: On-the-job thinking by interaction

The tendency of conceptual thoughts to be 'triggered' implies the existence and presence of a trigger. PFT07 had described how cascades of thoughts and behaviours occurred upon being 'triggered', like 'chain reactions' leading from one to another in an order or pattern perhaps influenced by the degrees to which the various concepts in question had 'sunken in'.

On-going interaction operating on a number of levels is presented in this section as a source of catalytic triggers to thinking. Interaction with others and the environment was a 'trigger' specifically for the instances of on-the-job thinking that were clustered into two of the three final super-ordinate themes dedicated towards thought activities; those of sensing and projecting, emerging alongside conceptualising. Sensing included thinking activities that employed general concepts with the aim of making sense of perceived sensory or non-sensory information in a predominantly reactive manner, while projecting included thinking activities that employed general concepts with the aim of generating imaginary sensory or non-sensory thoughts in a predominantly proactive or predictive manner. Thinking as a result of interaction was also experienced linguistically by the participants while communicating verbally with other people, and with themselves via another main super-ordinate theme that emerged among the final eight; that of self-talk. This latter form of interaction is presented first in the following sections.

4.4.1 Thinking while communicating

While non-verbal communication was prominent throughout the transcripts, verbal communication with clients was the 'trigger' to a significant amount of the thinking described by PFTs. The participants were able to describe trains of thought and realisations based on the straight-forward exchange of ideas arising from the very acts of talking and listening. Some of the participants showed appreciation and commitment to the idea of learning directly by communicating with others, and actively sought out interactions they felt they could benefit from. PFT07 for instance described coming to a realisation and being prompted to think about something new upon having his attention drawn to it by a fellow PFT.

“She said, 'Ah I see you're training girls now as well, I see you're training women.' Because she was, 'Four years I've seen you training men.' I didn't even realise this but we spoke about it, I thought about it.” (PFT07)

PFT08 described the act of internalising or taking something “on board” when it was directly presented by someone else, in this case an observation by a friend that validated the progress he had made in developing his interpersonal skills.

“No it was like... she told me she prefers me now as I am, rather than as I was, and I wasn't like, jumping around about it, but I took it on board as a positive compliment.” (PFT08)

Some PFTs actively sought communication and the solicitation of information from others systematically as a matter of routine. PFT09 explained how she would deliberately request feedback from clients before each session, knowing that valuable and useful information might be presented.

“Yes I like to have some feedback as well. How are they feeling, whether they are happy with our programme. I want to know their feedback. Even before I start a class for example. I want to know for example if everyone is OK, and I go maybe 15 minutes before or 20 minutes before and start speaking with them, I start telling them whether they had any pains or not...” (PFT09)

PFT05 described a similar structured and systematic commitment to obtaining new information for his consideration directly from others, in this case during the initial consultation session. He described a set script of questions he used to guide himself through this process, designed to elicit information on a “deep” and “emotional” level.

“I go into much deeper questions like for example, 'What is affecting your life today? What is making you feel weak, fatigued and sluggish? Have there ever been any insults? Have you ever been through bullying? Do you have medical conditions running in the family that you are scared of experiencing?' That is when you meet the client at a very emotional level.” (PFT05)

In terms of asking questions and obtaining information, direct communication with others appears to be a sound means of obtaining fresh, externally generated information for consideration and thought. It was also considered significant to the researcher, therefore, that an even more prominent theme emerging from PFTs' accounts of their thoughts, more so than communication with others, was communication with themselves, or self-talk.

4.4.2 Self-talk

Self-talk, where actual verbalised conversation with another person was replaced instead by conversation directed internally with oneself, was prominent among the final eight super-ordinate themes. PFT04 described a relatively seamless continuation between these two forms of conversation, from interaction with someone else, to interaction with himself, building on the externally-provided information by drawing upon his own ideas and experiences via a bout of reflective self-talk.

“Because I remember she told me not every client is the same, they're going to come and be attending all the time, and like, it's true, I started saying to myself, what was I looking for? Was I looking for the type of client that would be a regular, that would be attentive...” (PFT04)

PFT11 explained how self-talk was a means of looking inside and understanding what is going on inside one's head, a process guided by various consistent questions.

“It means looking within to see what's going on in your head. Are you happy? Are you content? Those are questions I've always been asking myself, a long time before this.” (PFT11)

PFT04 raised the notion of self-talk through prayer, whereby another third-party is essentially introduced into the interactive relationship, to whom internal talk could be directed, in this case a spiritual entity.

“I'm like, 'God...' I prayed so much. I said, 'God if you get me out of this...' I told Him, 'I swear to you I'll never ever do this again, get so personal with the client.' And I swore, I swore, I said, 'God get me out of this... God get me out of this...'” (PFT04)

Incidentally, PFT07 also made reference to the notion of spirituality, initially associating it with self-awareness, although subsequently retracting the association. He suggested that the ability to indulge in self-talk was a result of greater self-awareness. The inability to engage in self-talk on the other hand was attributed to being rushed or stressed, portrayed as a form of disconnection.

“I believe everyone who is a bit more... you don't have to be spiritual or whatever, you have to be just a bit more... aware, pretty much. I believe everyone who is a bit more aware has this internal conversation going on. I know there are people who don't even... they rush so much that they don't even stop and think about what happened to them, about what happened, why it happened, where am I going? I know there are so many people like this, very primal, very rushed.” (PFT07)

The notion of the absence of self-talk resulting from stress or being rushed was incidentally corroborated by PFT09 in a later interview. She stated explicitly that being rushed and busy prevented her from being able to spend time consciously thinking. When specifically asked if she ever had 'internal conversations' with herself, she confirmed her lack thereof, and immediately cited holding down two jobs as the main reason.

“... Not that much, no. (Laughs) Really at the moment I don't have time. (Laughs) No, no. I'm working a lot, with two jobs. With manager and fitness, I'm working a lot at the moment.” (PFT09)

PFT07 further explained that self-talk was an important part of the process of getting to know oneself, and being or becoming more self-aware. He suggested that this was most

likely to happen during times when one is alone and has time to reflect. He later compared the self-statements arising from self-talk to a “guiding voice”.

“Well... through times and periods of my life when I've been away on my own and when I haven't... when I really had to abandon my social circle and go somewhere for a period of time and do something, there have been periods when I have spent quite a lot of time on my own. And at these moments you become much more aware of yourself. You become much more observant of others, and you... since there is the absence of other people you become a bit like Tom Hanks with... you know, what was the name of the movie?”

“... It's a bit like a guiding voice. No matter how funny it sounds it's a bit like a guiding voice.” (PFT07)

PFTs provided many examples of situations involving self-talk statements resembling a 'guiding voice' warning against various dangers, occurring during unfolding emergencies or high-stakes situations.

“Like, 'Hey, hold it, take a break, think.' You know, if you say certain things it might end up being counter-productive.” (PFT03)

“I was talking to myself, because I was thinking, 'Oh my God she's dead, oh my God she's dead!’” (PFT06)

While the self-talk described by participants indeed featured such self-statements, the majority of it tended to occur in the form of questions rather than statements. PFT06 described a bout of self-talk in the midst of an emergency situation consisting of a series of self-questions occurring very quickly.

“I was thinking, 'Oh my goodness what's happening? What's going on?' I'm like, 'Why has she just stopped? How is she stopping and the treadmill is still moving? Oh my goodness she's actually collapsed... she's actually... fainted...’” (PFT06)

PFT03 described another quick self-questioning sequence occurring during an episode involving surprising behaviour and statements made by a client.

“Who is this person? Is she a lunatic telling me this in front of these people?’ That was my first thought. 'Is this person for real? Coming to me talking about toilets?’ You know? That was the first thought process.” (PFT03)

When self-talk did not occur in spur-of-the-moment episodes involving some sense of urgency, it featured in bouts of slower and more deliberative self-talk. PFT08 described how his self-questioning sequences were typically built around the aim of evaluating his day, based on what he could do better and what he should not have done.

“... It's much more kind of... self-evaluation, self-evaluating myself... the day that I've just gone through, 'What could I have done better? What should I have not said?’” (PFT08)

PFT04 similarly described self-questioning sequences based on considering the facts, determining fairness and correctness, and retrospectively evaluating alternative possible reactions or behaviours.

“So the reflection comes... I analyse the antecedent, the start of it, and how it ended up, after I reflect, when I'm reflecting. The start of it, what I did or what I've done or what I've said, and then I go through it. And I say to myself, 'But was I fair? Was I right? Did I do a good thing?' And then I start analysing it. I start saying listen,

'OK here is where I should have... she was right I should have done this...' PFT04

PFT05 reinforced the notion of scripted or structured self-questioning by explaining how he would actually record the results of such 'internal conversations' in writing, for future reference to continuously update and improve on the systems he employed.

"... This type of system worked this type of system didn't work because that type of client gave me that feedback, also this client gave me that feedback or I was expecting this reaction but I got a different reaction, so by time you try to eliminate what doesn't work and you change to what works." (PFT05)

Throughout the interviews and continuing recurrence of the notion of self-talk, given that questions are typically asked by one person to another, the researcher became increasingly interested in the origin of questions put to self, or rather, how participants knew what to ask themselves. PFT11 suggested that self-questions arise from the responsibility one holds for one's own happiness and well-being, and are shaped by the various feelings one encounters throughout the day.

"Well I believe that you are responsible for your own happiness and your own well-being, and how things are working out in your life, so those questions are coming from that point of view, I guess. And how you go through your day feeling. The things you get frustrated about, the patterns that keep re-occurring." (PFT11)

The reference to 'pattern recognition' and its influence on self-talk, suggest the occurrence of internal interactions taking place between conceptual and feeling-based thoughts in the mind in a similar manner that permit the interactions between perceptions and preconceptions, discussed earlier in section 4.3.2. The interactions

appear to underpin a process occurring at a higher level of abstraction, between the subject and some conceived sense of self via the act of self-talk. In conjunction with the external interactions taking place between the subject and the environment as well as other people in the situational context, interactions across all levels appear to provide a neat and seamless loop of continuous 'triggers' sustaining on-the-job thinking.

Meanwhile, the explication of sensing and projecting as internal concept-interactions specifically occurring on the micro level as indicated by participants' descriptions of their on-the-job thinking, is presented in the following sections.

4.4.3 Sensing

Among the final eight, this superordinate theme emerged alongside two others dedicated to specific types of thinking activities. These were conceptualising, sensing, and projecting. While conceptualising included those thinking activities involved in creating, updating or selecting general concepts themselves, sensing and projecting were processes employing those concepts to satisfy the requirements raised by on-going interactions. The sensing cluster essentially included all thinking activities that employed general concepts with the aim of making sense of internally or externally generated sensory or non-sensory perceptions in a predominantly reactive manner.

More specifically, annotations comprising this cluster included thinking activities aimed primarily at understanding clients' reactions, thoughts, feelings, levels of ability, wants, and needs. Sensing or reading the client was generally achieved at least initially by a combination of verbal communication, and simultaneous observation of non-verbal cues and behaviours. PFTs generally agreed on the importance of getting to

know the client on a deep level before being able to select appropriate 'approaches' or design effective exercise prescriptions for them. PFT04 and PFT05 both stressed the importance of first appointments with clients, which for many fitness professionals traditionally consist of sit-down consultations where lifestyle, general health and fitness are assessed, and wants and needs discussed.

“That is why I need to feel the client when they come. I need to feel what kind of client this person is, how sensitive they are, even the way you motivate them...”
(PFT04)

“So the most exciting part, as ironic as it may sound, is to get to know them at a very deep level, because that is when you can get the clients to direct themselves towards where they want to be ... To know what is hurting them at the moment like for example physical pain, mostly mental pain, and all the stuff they go through in life, because beneath those layers of fat there is typically a story or more than one story that they have gone through.”
(PFT05)

Getting to know the client was typically an on-going process spanning well-beyond initial consultation and assessment. Upon being asked how he came to a certain conclusion about a particular client, PFT07 described his ability to do this by observing their “actions and reactions.”

“You never know what is happening inside a persons mind. Again I assume, it's a theory of mine. I get to that conclusion from seeing people's reactions, so I get to that conclusion by observing their reactions and their actions.” (PFT07)

PFT05 explained in some depth, on at least one occasion, how he was able to get know his client on a “deep” level by observing certain visual cues, including facial

expressions and the appearance of the eyes. He used his perceptions of these cues for the purpose of sensing the emotional state, confidence level, and determination of the client.

“The way she changed, the way she got so emotional really felt like there was a huge connection between her emotions and her expressions for example her facial expressions. So that was a true gut feeling that even the way her eyes looked, the way the facial expressions were, (claps once) it was completely different, and I was like, listen this girl is telling me... is expressing her pain.”

“Typically even the way clients walk in I already get to sense the feeling what kind of people they are, for example their level of confidence, how much maybe, not literally by just walking in but after a few minutes you would soon realise if this person means that she really needs to change or is just another consultation that she's having...” (PFT05)

PFT08 similarly reported the ability to be able to see positivity on clients' faces, for the purpose of assessing their enjoyment of the sessions he was delivering.

“If I see they enjoyed the session and enjoyed the programme, and I'd see positivity in their faces then it would be, kind of, a plus for me...” (PFT08)

PFT10 also specified which cues stood out for her in her observations of a particular client she found challenging, nominating observations such as being short with words, body language, and an “intense” look in the eyes.

“Like when I ask him certain questions he wouldn't want to tell me the answer, like he wants to hold back, like... He never said it's none of your business but I'd kind of

get that sense, like... back off, when I didn't really ask any intimate questions."

"I guess it's just the way he looked, his eyes. He had a real stare, like a really intense look. Maybe body language as well, more than his eyes." (PFT10)

When asked to further elaborate on the specific visual cues they were using to draw the various conclusions they cited about their clients, PFTs were indeed able to provide some additional detail. PFT11 described how the sound of clients' breathing was a useful cue in terms of what it actually sounded like, compared to what, in her opinion, it was *supposed* to sound like, essentially matching perception with preconception.

"Because their breathing isn't going right. There's like, unpleasant frustrating sounds sometimes, you know? The breathing should be smooth." (PFT11)

PFT10 showed similar examples of comparing client-performance-based perceptions to preconceptions of what is considered correct. She was able to sense the level of difficulty experienced by her client based on a number of visual cues, including incorrect technique and body position, lack of smooth movement, and excessive sweating.

"Because he couldn't get right into the positions. Even just a simple squat he would... because he had a bit of a hump, and he had issues in his knees and his ankles, he couldn't bend properly, so any small movement would be uncomfortable for him. I could tell obviously because it's not smooth, so you can see it's uncomfortable. Maybe not in pain but just not... it wouldn't be second nature to him to do it, so anything he would be doing he's... even you could see him sweating and like, really struggling to do it." (PFT10)

PFT12 similarly considered the way his client was “short” with his words as a sign he was not feeling comfortable, simply because of preconceptions governing how much people could normally be expected to say in certain contexts and situations.

“Their body language, yes, short... not that detailed, you know? Lack of words... they just say yes or no, or let's try it, maybe we'll do it, you know?” (PFT12)

PFT12 described how he would 'read' clients in terms of sequences of behavioural activities they should normally be able to carry out easily or “automatically.” Sensing tension was thereby possible via comparison of perceived behaviour with the preconceptions governing how one would appear when carrying out certain activities confidently and competently.

“They will be tense. They will be tense... they will for example, make mistakes.... how do you say... they make mistakes on what we do automatically, you know what I mean?” (PFT12)

PFT06 showed her comparisons of perception with preconceptions governing what someone medicated might be expected to look like, an image that for her must have specifically involved someone not being able to open their eyes fully, as this was the specific cue she highlighted upon concluding that her client must have been “heavily” medicated.

“She was quite heavily medicated on anti-depressants and she really was just about coherent...”

“But literally she was so highly medicated that she couldn't... she could just about open her eyes...” PFT06

Participants' descriptions also showed that carrying out sensing activities was possible in relatively short periods of time, making them useful in emergency situations. In a separate episode PFT06 was able to describe quite specifically, when pressed, which visual cues had caused her to suspect that her client was disoriented.

“Disoriented... no not disoriented, he didn't sound disoriented, but he acted disoriented, he looked disoriented... A bit dizzy looking... Becuase his eyes were a little bit... going from one side to the other, just looking around and taking... wider eyes...”

“He just looked a little bit, off-colour ... So he was a little bit white. Yes he went really pale.” (PFT06)

PFT11 showed internal interaction of concepts when sensing through her description of her ability to effectively “read” clients via recognition of patterns of perceived body language and speech. The ability to sense effectively in this case would necessarily depend on the availability and development of enough useful general concepts over time.

“You know, how you read people, in certain situations. The longer you do something the more you can recognise different patterns, different body language, and through what they say they want, you can kind of figure out.” (PFT11)

PFT12 also clearly stated his view that it was experience specifically that led to him being able to sense a wider range of states in his clients. He also cited the ability to effectively sense or 'read' clients as a useful and desirable ability for PFTs.

“And there are some people who do not show, they do not tell you. But from my experience I can tell that they are shy, and I try to adapt the sessions.” (PFT12)

4.4.4 Projecting

The final super-ordinate theme dedicated towards thinking activities included those based on projecting, predicting, imagining, visualising, or otherwise producing perceived information, imagery, or thoughts that were not incoming from the external environment, but rather generated internally. These thinking activities still occurred in conjunction with, and based on, general concepts albeit in a predominantly proactive or predictive manner. This cluster incorporated more specifically those inter-subjective themes that involved instances of projecting, visualising, imagining, simulating or predicting images, possibilities or scenarios, and any essentially mind-made or internally-generated perceptions.

PFT11 defined empathy, for instance, precisely as the act of imagining or simulating what another person might be feeling. She acknowledged however that the ability to do this depended on making “connections” with one's own previous concepts, forged through one's own similar experiences, showing that the projections must in some way always depend and be built on readily available preconceptions.

“You can't really feel anything that you on some level haven't experienced yourself and then you make that connection and empathy comes out of it. But even if there is things that you haven't exactly experienced you can still imagine what it would feel like if you were in that situation.” (PFT11)

Instances of visualising included projecting or essentially guessing what might be happening beyond the scope of one's own direct sensory experience. PFT04 described how he imagined who might be in the company of the person to whom he was talking on the phone, as well as what might be said by each person on the other end once the phone call had ended, all occurring entirely outside his own sensory range of experience.

“What goes through my head I know for sure is that if they are with their partner, if they are with their partner, if this mobile rings, what is the partner going to say to the person receiving the message, who messaged, at what time, why? 'Oh it's just Dan he just messages at this time he doesn't know that you have...' you know? That still goes through my head.” (PFT04)

Similarly PFT08 described his speculations about what might happen after a particular incident would have come to an end, imagining what, if anything, might be said to his superiors regarding the incident and his part in it.

“I just thought, I think she's going to tell something to the manager, you know that I was looking at her, blah blah...” (PFT08)

Visualising was also noted in the process of planning when participants described how they would attempt to predict possible outcomes in various situations. Stressing the visual nature of such thoughts, PFT03 explained how he would visualise possible

resulting scenarios when making important decisions both in immediate short-term cases, as well as longer-term in the case of business decisions.

“I picture the scenarios, visually, if I would reply in a certain way, if I act in a certain way, if I respond to a stimulus in a certain way, what do I think will happen.”

“... If I had to speak about the business, when I'm going to invest in a studio, I'm going to think five or six years ahead. So I think, yes, how much money am I going to make next month, in the next year, what should I do in that month and year to get a certain amount of money. If I buy that studio what will happen if I don't manage, and yes, basically those are the steps I think of in my mind.”
(PFT03)

Possible adverse scenarios could be visualised and predicted based on preconceived memories of previous undesirable episodes. PFT06 explained how she would visualise what might happen to a particular client who had previously fainted under her watch should she push him too hard in the future. The visualised thought was termed specifically as a “flash” through her mind.

“But every couple of sessions I would, right OK, today I'm going to push you more. But then it flashed through my mind yes OK I don't forget that when you do push people, this might happen.” (PFT06)

PFT04 showed how vivid projections could also be 'triggered' specifically by interactions of a threatening nature. Upon receiving the phone call from his clients' husband, PFT04 described visualisations of various adverse “imagined” scenarios, accentuated by the feeling of fear.

“I mean I started imagining things like this guy is going to come here, he's going to kill me, I'm going to find my car all broken or I'm going to end up going to the gym and he's going to do something to me at the gym, and I kept on believing this, and this image kept on coming to mind that at one point I'm going to pay for what I've done, for sure.” (PFT04)

Visualisations could also be generated and projected to span over extended periods of time in the future. PFT05 described how he couldn't 'imagine' himself doing a particular type of work, simultaneously drawing on a projected concept of self together with the associated feelings it might 'trigger'.

“Then in my second year doing the national diploma in IT (Information Technology) I was like, I don't imagine myself doing this any longer, it's time for a change.” (PFT05)

Projecting also recurred in participants' accounts of their thoughts when they described deliberations about what they might do differently should a past situation repeat itself. PFT03 described at least two incidents from his past in which he would have reacted differently given what he currently knew.

“Nowadays, being not in a stressful position, perhaps I might understand that the reason he was lying to me was perhaps he was being afraid that I'd be pissed off or angry...” (PFT03)

“I would have said that's her character that's who she is. You know I would have just took it in a funny manner and then I would have told the management, and then from there, whatever the manager decides, I'll see.” (PFT03)

Upon discussing a forward or overly friendly comment from a female client in response to which he had actually said nothing at the time, PFT08 deliberated what he might say should the interaction repeat itself, specifically opting in this case for a humorous verbal response.

“I’ll say, ‘Your boyfriend’s doing a bad job.’ (laughs) Something like that, you know, just humour, just joking about it. Hopefully it would be just humour. My intention would be humour.” (PFT08)

PFTs also described a more systematic use of visualisation as a technique for managing feelings or increasing motivation. PFT05 was able to explain a visualisation technique he had used effectively in the past to manage strong feelings of anxiety, with some degree of visual detail.

“That’s what I get, I get myself floating in water. I just see it from the side like... I get it from the side...” (PFT05)

PFT09 explained how, for motivational purposes, she would superimpose a projected image on top of the real one she saw in her reflection in the mirror. The superimposition would depict her according to how she would like to look in the future upon achieving her personal fitness goals, specifically with additional muscle mass and less body fat.

“When I look in the mirror I see myself more leaner, more muscle mass... I want that this comes to me. That I want to achieve this.” (PFT09)

4.4.5 Summary of theme three

Concepts and thoughts were established in theme one as being 'triggered,' resulting in 'chain reactions' of thoughts and behaviours. theme two situates such triggers in an on-going process of interaction between the person and others, the environment, one's own self, as well as between the various concepts inside the person's mind.

Thinking while communicating happened while talking with others as well as through an 'internal conversation' with oneself. The ability to experience internal conversation was associated with levels of self-awareness, attributing a lack thereof to being overly rushed or stressed.

When internal conversation occurred in the form of statements it was compared to a 'guiding voice' that was helpful to the participants. Internal conversation in the form of questions was prominent and occurred in instances of quick thinking, as well as during slower more deliberative 'internal conversations' which mostly occurred for the purpose of self-evaluation or 'looking inside'. The development and origin of self-questions was associated with memories and existing concepts.

Interactions were seen to occur on an internal level between concepts, on an intermediary level, still internally, between PFTs and an abstract concept of self, as well as externally between PFTs and others or the environment providing a seamless flow of 'triggers' to on-the-job thinking.

Interaction between the PFT and the client was responsible for the most prominent thought activities arising from transcripts, which were sensing and projecting. Sensing

was predominantly reactive in nature and generally aimed at gaining a deeper understanding of the person, often achieved by observing clients 'actions and reactions,' non-verbal cues, or any aspect of their behaviour not fitting with preconceived expectations. The availability of concepts, therefore, was necessary for PFTs to be able to sense effectively, which was considered a useful professional skill.

Thought activities that produced internally-generated perceptions in a more proactive or predictive manner occurred in cases of imagining what might be happening beyond the scope of ones' immediate experience, visualising possible future outcomes, speculating how one might respond differently should a past situation repeat itself, as well as visualising sensory-rich imagery for the purpose of managing feelings or increasing self-motivation.

4.5 Theme four: Autonomy of on-the-job thinking

Certain aspects of PFTs' descriptions of their on-the-job thinking prompted, following additional reflection on the part of the researcher throughout the data collection phase, the inclusion of various prompts and probes throughout the course of the data-collection period. Some of the objects of these reflections included the relationship between a person and their seemingly abstract concept of self, the origin of self-questions, participants' difficulties in attempting to explain why they entertained various thoughts or where they came from as well as the nature of, and degree to which, thoughts occur outside the scope of conscious awareness, including during episodes of thinking that could typically be considered explicit or deliberative. The prompts and probes 'triggered' by these reflections yielded data that eventually comprised important elements of the fourth and final main theme, expressed in this section. Given that tacit learning in the context of on-the-job thinking was a prominent theme in the review of literature, the notions of autonomy, awareness, and volition of thought were influential in the early interpretive stance assumed by the researcher.

4.5.1 On-the-job thinking independent of awareness

In one of her emergency incidents, PFT06 described an impressive sequence of cognitive processes occurring automatically and independently of her conscious awareness spanning two similar incidents, years apart.

“... It was automatic... but learning from the first one it was automatic not just an arm, [PFT06], just get in there! Get in there and hold him! He's going to fall, you know?”

“... So instead of just grabbing one arm I actually bear-hugged him and stopped him from falling.” (PFT06)

Both incidents were similar, and involved a client losing consciousness. The speed at which the incident occurred means that given the time available to act, it was unlikely PFT06 deliberately decided to carry out a “bear hug” instead of grabbing one arm as she had done in the previous incident. Despite some relatively complex cognitive processing being required to match the unfolding experience with a prior memory, and quickly deduce that bear-hugging would be a better response than grabbing one arm, as well as the creation of a sense of urgency and internal verbalisation of the self-statement to, “just get in there...”, the underlying thinking in question happened extremely rapidly and outside of her conscious awareness. She explicitly described her decision as “automatic”.

There was also a degree of autonomy during the first incident itself, where no prior experience had as yet existed regarding possible reactions to a client suddenly losing consciousness. She nevertheless explicitly stated how she had carried out the “quick reaction” of grabbing the client's arm, “without thinking.”

“‘She's coming back she's coming back, what's she doing?’ And that was like just a quick reaction to grab her arm... But that was a quick reaction just to grab her. So I didn't think about that. ” (PFT06)

Just as conceptualising was previously presented in section 4.3.1 as an example of an efficient thinking system, the ability to operate automatically without needing to engage in excessive thinking also appeared to resemble an efficient system. Indeed, PFT12 recognised the ability to carry out actions automatically that might otherwise require a

degree of conscious deliberation, as useful and positively correlated with having “more experience”.

“There are situations where you have to adapt at that particular moment, and the more experience you have the more automatic you're going to be how to face the situation.” (PFT12)

Cognitive processing at a level beyond conscious awareness was also noted in PFTs' descriptions of their abilities to carry out a certain action or task without knowing how they were able to do it. In the case of sensing, the outcomes of this particular type of thinking activity often presented themselves to the participants as feelings about what was being sensed, without them knowing exactly how the conclusions in question were being drawn. This was plainly stated by PFT09, who in a case of sensing that her client was shy, inferred an ability to draw such conclusions without being entirely aware how.

“I don't know how to explain it, but you can see someone if he is shy or he is not confident enough even when he's doing some training...” (PFT09)

PFTs had previously described their ability to sense clients by observing specifically nominated visual cues, however these details often required some probing from the interviewer before they were divulged. Many of their descriptions were instead based on *feeling* something to be the case, or as described by PFT10, in the absence of knowing the underlying processes leading to the drawing of a given conclusion, a “vibe”.

“I kind of got the sense that he didn't want to be there, you know what I mean? So I just kind of... I could think

that the wife dragged him there so they train together, that's the vibe I got off them.” (PFT10)

The existence of unknown underlying thought processes occurring in a domain inaccessible to the conscious awareness of a subject, was also reinforced by the apparent difficulty experienced by PFTs in accessing various thoughts on demand or “out of the blue”. Some of the participants explained their inclination to remember things only in relevant situations, or by having them 'triggered' by other similar or related thoughts. PFT07 quite clearly explained how certain memories were “stored somewhere,” but he could not always freely recall or think about them. Upon being 'triggered', the movement of such memories into the implied field of conscious awareness, and inferred transformation into perceptible thoughts, would be experienced as a “click” in the mind.

“I tend to forget things form the past even when you ask me how long you've been doing this for, it's really hard for me to give you a frame like I've been doing form April 2000, it's really hard so even past experiences I don't really... I store them somewhere and when we start a conversation about a certain subject or certain event, then it triggers, it clicks, but I tend to really keep them, you know, at... how should I explain, I don't really try to remember them.” (PFT07)

The notion of memories and thoughts 'clicking' into one's mind from some underlying non-conscious domain to a conscious one as a result of contextual or conceptual interactions, suggests that 'chain reactions' of thoughts span both domains, with segments originating, terminating or otherwise migrating in or out of an implied field of conscious awareness. PFT12 illustrated how decisions were made automatically as a

result of previous existing research and knowledge at some point 'clicking' into awareness, thus presenting the PFT with a workable solution.

“It just comes automatically which exercises I need to choose because I know what exercises target what muscle group for example, through research, through previous education...” (PFT12)

The notion of an internal and automatic interaction of thoughts taking place across implied conscious and non-conscious domains was discussed in some depth with the participants particularly in the context of their experience of self-talk. PFT07 described self-talk as a result of the “natural” mental processes that occurred throughout the day in response to the various experiences he encountered, or things that “impressed” him.

“They are part of my mental processes during the day. Part of my, you know, part of the things I evaluate on my own. Part of my internal conversation, they happen. Sometimes they just happen like something impressed me or God knows on what level, and it comes back to me and sometimes something really impressed me and I, 'OK let's see what happened here, why did this happen?' And I try to explain to myself... see if it's safe to go outside of the cave or no... (laughs)” (PFT07)

While PFT07 described the tendency of things to make an 'impression,' essentially 'triggering' some 'chain reaction' eventually leading to a thought 'clicking' into conscious awareness, PFT12 similarly cited the trigger of “being stuck” as opposed to something simply making an impression, as the 'trigger' to reflective self-questioning.

“Sometimes I ask myself questions when I'm stuck at something. Because when you don't face difficult moments you just keep on going. You won't realise you have to think deeper.” (PFT12)

The various occurrences that make 'impressions' or cause people to become 'stuck' throughout the course of their on-going interactions, are thereby portrayed as 'triggers' prompting 'chain reactions' of actions, reactions, thinking and learning.

“Sometimes you don't plan it. Sometimes you're just there doing your daily work and you hear someone talking about something, like why they're lacking in motivation. And you try to ask what.” (PFT12)

PFT10 also explained how the reflective process would arise naturally out of things that had happened, which in her particular case was triggered by the feeling of awkwardness.

“But if for example I just had that one session and then I'm driving back home that's usually my time to reflect. So on my way home I kind of reflect on it, thinking why was this so awkward, or whatever. And kind of thinking... you know you kind of replay it in your mind...”

“That's kind of my time to... when I'm driving is always when the mind starts working... it's like my mind starts to wander when I'm driving because I'm not really thinking about anything... you're just, driving. So that's when my mind starts to wander, so it could wander around anything but if that's the situation I'm thinking about the PT session that just happened... I guess I still thinking about what happened and why it felt awkward.” (PFT10)

Through the portrayal of thoughts and behaviours as natural flowing phenomena impelled by various interactions, and the notion of the mind 'wandering' automatically, the impression of thinking as an act occurring seemingly independently of volition is thus revealed.

4.5.2 On-the-job thinking beyond volition

The term 'mind-wandering' characterises a natural or fluid nature to participants' reflections. The interviewer duly probed this notion by specifically asking the participants if they employed a set repertoire or structured approach in their reflections. PFT08 insisted that his reflections were unplanned, and happened “naturally”.

“Sometimes they just come to me naturally and sometimes I just kind of reflect and see what I could do better, to improve. But no there's no set repertoire as you said. Sometimes they just, you know... I think about them, and sometimes you just... you know... they happen quite naturally. I never sit down and say OK I'm going to think about this day, I'm going to think about what would... it just comes in naturally.” (PFT08)

PFT11 similarly depicted reflection as a fluid process, unplanned, and as something that “happens naturally.”

“It's definitely a more fluid process, yes. I don't sit down and think right now I'm going to reflect, now I'm going to see what's going on, and make things better or worse or whatever. Yes, it happens naturally.” (PFT11)

Given that the reflections described by participants appeared to be largely unstructured, while including bouts of self-talk and self-questioning, the interviewer sought to establish how, in the absence of externally posed questions, the participants knew what to ask themselves. PFT11 offered some insight here, eventually pinning it down to “intuition” in the following excerpt.

“Interviewer: Apart from your meditations would you say that you are quite disciplined with your thinking sessions? Are they planned?”

PFT11: Not planned. I don't think they are planned.

Interviewer: But there is structure to them?

PFT11: There is structure in the sense of wanting to better myself or better a situation and come up with a solution.

Interviewer: And how do you know what questions to ask yourself? How do you know which questions need asking?

PFT11: I don't know. Could it be intuition?”

When asked how she knew what to ask herself during bouts of self-questioning, PFT10 answered simply, “I don't. They just, do. I just think about it.” PFT07 further intimated fluidity of thought in self-talk by explicitly stating that most people cannot tell themselves what to think.

“It's like... you don't really tell yourself what to think of, no it's very few people who tell themselves what to think of, you know, and they can direct their...”

“Well... it's common sense.” (PFT07)

PFT10 likened the experience of some of her reflections to a “broken record,” replaying in her mind, which changes only when it is replaced by something else that might act as a trigger provided by the on-going interactions one experiences.

“I guess maybe it just keeps replaying in my mind, so whatever it is. I mean I probably do the same with this now. (laughs) This is the way it is for me. I don't know I guess it's kind of like a broken record sometimes. It takes a while until I move on to something else.” (PFT10)

PFT06 explicitly reinforced the notion that in terms of how they are experienced, reflections happen automatically, that they somehow start and continue to persist beyond one's control or volition.

“I try to tell myself to stop over-analysing. It does happen to me automatically. I'll over-analyse a friend, a conversation, why did I say this instead of saying that?”
(PFT06)

Just as feelings were seen to be experienced in terms of magnitude and persistence, their associated thoughts were also reported to as part of that persisting experience, once again seemingly occurring beyond the scope of volition, and described as “playing” on one's mind.

“I must have been thinking about it all afternoon. It played on my mind for days. Because I felt sorry for her and I didn't want it to happen again.” (PFT06)

“It would play on my mind and try to make like, make sense of it all.” (PFT05)

In terms of volition or control, PFT08 discussed the notion of whether thoughts actually needed to be controlled or not. He explains the tendency of thoughts to happen naturally as something positive in a healthy individual, and that internal conversation in particular was an aspect of thinking that was useful and indeed valuable.

“I don't really have to control it. I believe people who are unhealthy and have mental issues, they have to try to control it. I mean for me it's part of who I am, it's part of a healthy human being, so I don't really have to control

it, it's... it's part of me really, and there have been situations when, there is no one to give me advice or to tell me what and how. And there is this internal voice that will tell me... I hope I'm not sounding crazy... which would tell me... OK let's say in a situation... 'OK calm down, wait a bit, you might not be right...' or 'Wait, let's see what else there is, it might not be as you think it is...' and it's really, for me not something I have to control. It is part of me and I'm very proud and very happy that I actually have this internal conversation.” (PFT07)

Faced with the notion that thoughts could be experienced beyond conscious control, the issue of subjectivity was further probed by the interviewer. PFT06 verbalised the quandary of lack of control through a simple comment she made about her reaction during an emergency situation.

“... But at that moment when I was going through it, and I helped her and I got on the floor, something just takes over...” (PFT06)

By suggesting that *something* takes over, PFT06 essentially establishes herself as an experiencing but not volitional subject. In his discussion of memory recall, PFT07 outlines the notion of a “healthy brain,” citing *it* as the entity responsible for recalling and generating thoughts.

“Of course. I don't think about them on an everyday basis but they reflect on what you're doing and how you're doing it. And you recall them as well, it's the way the brain functions. If the brain functions properly, yes. Because it could be that you cannot recall them as well, but if the brain functions properly, yes.” (PFT07)

PFT05 reinforced the notion of the brain as an originator of thoughts independently of the concept of one's conscious volitional self, when he referred to his experience of it taking "the front seat" during various bouts or episodes of thinking.

"So basically, I don't know it's maybe because sub-consciously I take the decision that listen, doing exercise for example doesn't involve a lot of thinking, so maybe that is when the brain like takes the front seat and tries to take me directions, et cetera et cetera." (PFT05)

In addition to the ability of the brain to 'take the front seat' and take the felt conscious self in various 'directions,' he later developed the notion further by describing how, in a particular situation, the brain was capable of "rationalising" that studying could be afforded a low priority, allowing various other thoughts to "come in".

"I think that the brain rationalises that listen, the studying could take the back seat even though it's still only an hour I'm dedicating to the studies every day, and that is when a lot of thoughts start to come in." (PFT05)

PFT12 corroborated an apparent independence of the brain or mind when asked if he allocated time to thinking and planning. He described the futility of attempting such an exercise, instead reinforcing the fluid and natural nature of thoughts to arise from interactions and 'chain reactions'.

"I think it's useless you plan to try doing something when it's not the right time. I prefer to leave it for when it's the right time to do it, and I focus more. Sometimes you plan like a half day for doing programmes, and you start but your mind is not there. And one day out of the blue your doing something else and a plan just comes into your mind, or for example we're here, sitting here and we see

something, or I hear something and it reminds me about that scenario.” (PFT12)

The notion of thoughts as an automatic product of a 'healthy brain' being presented to a conscious perceiving subject as an experience was evident in a description by PFT11 who commented further about the actual deep and subjective nature of such thoughts. Upon being asked how various images were experienced during the process of choosing exercises to include in a session, she engaged in a deep reflection about how indeed these thoughts she knew she so regularly experienced actually presented themselves.

“Like a picture that's in black and white... I think... I've never asked myself these questions. This is really interesting because I have to think... are they really? And how do I think about them? I think it's just pictures coming to my mind as I go through the sequence, as you build it.” (PFT11)

While she was aware of the product of such thinking in terms of its outcomes and her ultimately knowing what exercises she should use, the extent or level of this awareness came into question when the appearance of images she essentially 'saw' on an almost daily basis was so challenging to describe, despite knowing exactly what such images portrayed in terms of which exercise to choose.

4.5.4 Summary of theme Four

Theme four explored volition or wilful causation of thoughts attributable to a consciously volitional person, and awareness or lack thereof of thinking by that person. Participants tended to attribute aspects of their behaviour to particular third-person concepts of self when this was arguably not strictly necessary for a first-person

conscious thinker to do. Deeper implications of subjectivity of thought were then sought. Notions of autonomy, awareness and volition of thought were, therefore, of significant influence on the interpretive stance held by the researcher.

PFTs engaged in behaviours requiring relatively complex cognitive processing which sometimes occurred at a level almost entirely independent of conscious awareness, quickly and efficiently without the need for excessive time or energy invested in thinking deliberately. They were also able to carry out abilities like sensing and drawing conclusions about clients without knowing exactly how they did it. They were similarly unable to recall certain memories 'out of the blue,' but rather indicated that such thoughts 'came in' when needed or when prompted by the presentation of similar or connected thoughts or memories.

Thoughts making the transition into conscious awareness were experienced as a 'click' in the mind, seemingly representing the end result of a chain reaction of prior thoughts on-going outside of conscious awareness, themselves triggered by on-going interactions on various levels. Reflective self-talk was described as being triggered by things that made an impression or by being 'stuck'. These acted as triggers to subsequent chain reactions of thoughts, actions, and reactions. Reflections were described as fluid and unstructured, from the mind-wandering 'just happening,' somehow beyond control or volition. The tendency of thoughts, like feelings, to occur in various grades of magnitude or persistence, also suggested they occurred beyond conscious control, and that control was not necessarily actually needed, since this was generally a productive process when performed by a healthy brain.

In terms of subjectivity, PFTs accounts suggested themselves as perceivers of thoughts rather than causers. The brain was nominated as the entity that is in control, independently of the concept of a conscious and volitional self. A healthy brain acts as originator of thoughts which are presented to the consciously perceiving self. The exact nature of the experience of the presentation of these thoughts was challenging to describe, suggesting that awareness also takes place in grades of magnitude.

4.6 Initial eidetic description

Based on annotated interpretations of meaning-rich aspects of ten interviews about participants' experiences of on-the-job thinking, the initial stages of a reflective eidetic analysis were carried out to begin reducing the data to its essence. Imaginative variation was used to begin identifying and removing incidental aspects, to encapsulate more essential features in the four main themes, themselves constituting the basis of an initial eidetic description.

Concepts of self appeared to be of significant influence on participants' thoughts and behaviours. They constituted ready-to-use guides or blueprints for a variety of actions and interactions in a range of situations and contexts. How participants saw themselves as trainers and as people, or how they would like to see themselves, were captured in these abstract conceptual types. It was interesting to note that participants often referred to themselves as being particular "types" of persons as justification for various thoughts and behaviours, comparing themselves to third (albeit conceptual) parties, as opposed to conceptualising their thoughts or behaviours on a strictly first-person basis. This tendency stood out as a noteworthy feature of participants' on-the-job thinking, and perhaps even more significant, was the apparent choice PFTs had in 'following' various self-concepts, and their propensity for modification and development through learning.

Guiding concepts were also noted in a more generic sense, in the form of beliefs, ideas, schools of thought, philosophies, or 'main ideas'. Additional concepts followed on from the main ideas like 'chain reactions', to be 'followed' in a range of contexts and situations, quickly and efficiently. Examples of learning outcomes resulting from the

use of general concepts however, were sometimes questionable. Participants' accounts were rich in descriptions of feelings and feeling states, which also appeared significantly influential on thoughts and behaviours. Some participants were aware of this influence and described various strategies for managing negative or unpleasant feelings. Feelings of various grades of magnitude and persistence were not merely catalytic to thinking, but also appeared integral to it, accenting reasoning processes with regard to the compatibility or otherwise, of incoming perceptions with existing preconceptions, and promoting the 'sinking in' of various particular concepts.

'Triggers' to 'chain reaction' thinking were seen as being emergent from interaction on various levels, externally between subject and others and the environment, or internally between subject and own sense of self, as well as internally between existing concepts. Verbal communication too, was an example of such interaction, taking place not only externally with others, but also internally via frequently cited episodes of self-talk. The origin of self-questions and self-statements made during such 'internal conversation' was attributed to the internal interactions of existing concepts. The experience of on-the-job thinking was conceivable as the result of a seamless flow of 'triggers' originating from interactions on these various internal and external levels.

The majority of thinking processes arising from interactions with others and the environment were categorised broadly as sensing and projecting, both based on existing concepts, which in themselves engendered a third category of thinking activities aimed at their creation, modification, or selection (conceptualising). Sensing and projecting were based on the interactions between externally or internally generated perceptions,

and existing preconceptions. Sensing and projecting, therefore, appeared to often occur simultaneously.

These and other complex cognitive processes were noted during the interviews, some of which occurred quickly and autonomously without the need for excessive time or energy invested in thinking deliberately. PFTs were also able to carry out abilities like sensing and drawing conclusions about clients without knowing exactly how they did it. They were similarly unable to recall certain memories 'out of the blue,' and described how such thoughts 'came in' only when needed or when prompted by the presentation of similar or connected thoughts or memories. Thoughts making the transition into conscious awareness were experienced as a 'click' in the mind, seemingly representing the end result of a chain reaction of prior thoughts that were on-going outside, or beneath the surface, of conscious awareness, themselves triggered by on-going interactions.

Reflections were typically described as fluid and unstructured, a result of mind-wandering, 'just happening', seemingly beyond conscious control or volition. The tendency of thoughts, like feelings, to be experienced in various grades of magnitude or persistence, portrayed their occurrence as increasingly beyond conscious control. Subjects appeared, therefore, to experience rather than cause such thoughts. And finally, the experience of such thoughts in terms of their actual nature, or how they presented themselves, exactly, was challenging to describe.

Chapter five: Discussion

5.1 Preamble

Following De Lyon and Cushion's assertion that formal learning channels had failed to equip fitness professionals with sufficient or suitable knowledge for the "real world" (2013, 1408), OJL was presented in chapter two as the main, or "most important", way professionals learn following the cessation of formal education and training (Eraut, 2004; Marsick et al., 2006; Melton et al., 2010; De Lyon and Cushion, 2013). Despite its apparent importance, however, OJL remains poorly understood and under-researched (Eraut, 2004; De Lyon and Cushion, 2013). The specific tendency for OJL to occur predominantly tacitly was considered, following a review of two bodies of literature on sector-specific research and more general theories of experiential learning, as a primary cause for the prevention of continuing research in the field, and active caution among researchers, educators, and trainers, against prioritising it as an on-going process (Eraut, 2004; De Lyon and Cushion, 2013). The tacit-ness problem was further reduced throughout the ensuing thesis to the more specific problem of tacit on-the-job *thinking*, and the phenomenological perspective invoked as a viable means of re-conceptualising it as a phenomenon, potentially addressing the current impasse in further studying OJL. Two main research questions were posited concerning first, the essential nature of on-the-job thinking according to the subjective accounts of PFTs, and second, how such insights might inform or otherwise facilitate or promote a revival of research and development in the field of OJL. To address these questions, a research design was presented in chapter three, based on a general qualitative scientific methodology, classical phenomenology, and phenomenological designs as implemented in various modern research contexts.

Following the data collection phase, which was based on episodic phenomenological interviews with ten PFTs, initial themes were constructed by articulating interpretive annotations (Smith and Osborn, 2008) in the initial stages of data analysis, that “go beneath” the “immediate experience” (Aagard, 2017, 523), as opposed to purely describing meaning-rich units in the transcripts (Giorgi et al., 2016). This pivotal methodological decision was made due to the unique requirements of the first research question, since pursuit of the essential nature of on-the-job thinking would require a probing of hidden or deeper aspects of PFTs’ descriptions, that “leak out”, of which participants themselves may not have necessarily been aware (Smith and Osborn, 2008, 53). In the previous chapter, a detailed exposition of the emergence of these annotations and their resulting themes was carried out to ensure transparency, and to allow other researchers to follow and critique the main interpretations and decisions made. Theme development at this early stage was predominantly influenced by modern phenomenological methods, namely those emerging from the interpretive school (Smith and Osborn, 2008), based on the researcher’s own position as a primary instrument of analysis. The researcher’s own position was outlined and discussed in chapter three (section 3.6.1) with a view to establishing context and background to the interpretations and decisions made. The previous chapter culminated in an initial eidetic description of the phenomenon of on-the-job thinking, according to the researcher’s interpretations of PFTs’ accounts.

In this chapter, the initial eidetic description is subjected to continuing reflective phenomenological analysis, in pursuit of a deep and final eidetic description of pure essence in the Husserlian sense, albeit through the unavoidable interpretive veil

acknowledged by both Husserl and Heidegger. The final description is finally given an analogous quality in the tradition of Merleau-Ponty, as well as the descriptive vibrancy and creativity associated with the interpretive phenomenological style espoused by Van Manen (1996).

The final eidetic description is hereby *constructed* (in the Heideggerian sense) throughout the following chapter. It is presented, precisely, as a phenomenological description, and *not* as a model designed or intended to uncover or “search for causal laws” (Aagard, 2017, 524). In other words, it is presented as a descriptive and “contestable” (Aagard, 2017, 524) construct of phenomenological thinking, rooted in subjective science, and *not* as an explanatory or predictive construct of “natural thinking” (Husserl, 1973, 18), rooted in objective science. The analogous and metaphorical aspects of the final eidetic description are intended to non-experimentally “clarify” rather than “quantify” (Salkind, 2003, 221), with an underlying aim to “endow scientific operations with meaning” (Merleau-Ponty, 1962, 68), to the extent analogies can indeed be considered “profitable” in advancing human understanding of complex phenomena in the natural sciences (Roediger, 1980, 231). By knowing analogies, according to Brentano, “everything becomes transparent, easier to grasp and to retain” (1995, 75).

The imagistic nature of the analogy developed throughout the course of the chapter is intended, in accordance with Van Manen’s tradition of creative phenomenological description, to *show* rather than *tell* (2017, 788). The final eidetic description (together with its accompanying analogy) is thus offered as the first part of the researcher’s unique contribution to knowledge, as a re-conceptualisation of on-the-job thinking in

the context of OJL, based on the perspectives phenomenological inquiry is uniquely positioned to uncover, with a view to prospectively yielding alternative and original lines of further inquiry in addressing the current impasse hampering continuing exploration of OJL. The prospective contribution of the final description is then discussed in more detail in chapter six.

With respect to methodological rigour, as discussed in chapter three (section 3.5.3), a commitment is maintained throughout the ensuing narrative, representing steps four and five of the research method, towards “elaboration and maturation” (Morrow, 2005, 252) of the key ideas, drawing on philosophical concepts, existing literature, and the words of participants themselves. Question one is addressed first, elucidating the development of the final eidetic description itself, followed by question two, with a discussion of the relevance and applicability of such a description with respect to facilitating a revival of research and development in the field of OJL.

5.2 The essential nature of on-the-job thinking in the context of learning

According to the researcher's interpretations of PFTs' accounts and their culmination in a final set of main themes, the initial eidetic description of the phenomenon of on-the-job thinking presented in conclusion of chapter four, can be further summarised and articulated, in brief, as follows:

Acts of on-the-job thinking were described as 'chain reactions' triggered by the seamless flow of interactions both internal (with oneself) and external (with others and the environment), occurring in various grades of magnitude and persistence, based on 'following' existing concepts or 'main ideas', and aimed primarily at sensing and/or projecting.

Upon closer evaluation, and subject to further phenomenological reflection, traces of the natural attitude were considered to be clearly evident in the above description. Further to the methodological discourse in chapter three, from a *natural thinking* perspective, phenomena in the world must be conceived as quantifiable objects, or *objectified*, so that objective science can proceed with methods based primarily on their comparison and correlation. William James emphasised the very natural ability of the mind to make *comparisons* between objects presented to it, as one of its strongest faculties (2017, 210), and a firm basis for *natural* thinking in the objective science sense. *Philosophical* thinking on the other hand, according to Husserl, is based primarily not on *comparison*, but on *clarification* of phenomena (1973, 15). By employing the phenomenological attitude of epoché, the reflecting phenomenologist must suspend all judgements resulting from, or based on, the methods and facts of

objective science (Husserl, 1960, 25). The initial eidetic description, therefore, was re-evaluated with the aim of further clarification, to lessen reliance on the facts or assumptions associated with objective science, and address evident traces of the natural attitude.

The learning process has been traditionally modelled by education scholars in terms of objectified temporal phases like grasping and transforming (Kolb, 1984), or input and output (Eraut, 2004). Such models depict their inherent thinking aspects in terms of further delineated acts, like “fact-finding” (Lewin, 1952), “hypothesising”, “mentally elaborating” (Dewey, 1910), “observing”, “conceptualising” (Kolb, 1984), “reflecting” (Dewey, 1910; Kolb, 1984), “interpreting”, and “examining” (Marsick and Watkins, 1990). In chapter two, such conceptualisations of thinking and learning were presented as partly responsible for the impasse in studying OJL, in light of its problematic theoretical foundations. Existing models were further argued to be teleological, or excessively outcome-based, populated by constructs defined by their relevance to the desired outcome, rather than by the true essential nature of the thinking acts they are meant to describe. In his dissemination of thinking in action, based on prevailing theories of learning and cognition, Eraut (2004) concluded that processes in OJL must be even more complex than previously thought, and hence remain poorly understood by researchers and stakeholders. Despite a commitment towards empirical objective science in his work, Vygotsky was similarly critical of the early development of psychological methods and research strategies, on grounds of their reliance on the study of “separate, isolated and abstracted processes” (1987, 41).

In the absence of re-conceptualisation and clarification, fundamental concepts in theories pertaining to OJL have remained riddled with the type of “obscurities” Husserl professed as the inevitable outcome of objective science (1960, 4). It has been argued in this thesis, that education and learning theory (particularly its aspects pertaining to OJL), which currently draws heavily on the academic disciplines associated with cognitive science, stands to benefit from a re-conceptualisation of its theoretical underpinnings with respect to its thinking aspects in particular. Use of the term *thinking* as opposed to *cognition*, for instance, is, throughout this thesis, intended to highlight, at least in part, such a prospective shift, towards basing education and learning theory on a *phenomenological description of thinking*, rather than an *(objective) scientific explanation of cognition*.

The initial eidetic description articulated above, pending further phenomenological analysis and critical reflection, most certainly does not, as yet, constitute a suitable re-conceptualisation of on-the-job thinking. On the contrary, it can be interpreted, in parts, as a validation of certain aspects of existing prevalent models rooted in cognitive science and natural thinking. It is subject, therefore, to the very pitfalls associated with objective science it seeks to address. For any description of on-the-job thinking to suitably represent a less problematic underpinning of theories pertaining to OJL, the tendency towards objectification, separation and isolation, requires due restraint. Through “imaginative variation”, which is considered to be a principal tool of eidetic analysis (Aagard, 2017, 521; Giorgi et al., 2017, 182), or as termed by Husserl, the “uncovering” by “imagining all variations” (1960, 69), a vigorous and intensive attempt was made at further reducing the initial eidetic description to its most essential features. Any aspects of the description indicative of the natural attitude, or bearing resemblance

to “conceptual ragbags” or convenient “placeholders” (Logie, 2016, 2094), that did not cause the phenomenon of thinking to “collapse” upon their imaginative removal, could be duly discarded (Giorgi, 2017, 178). The eidetic analyses and reflections undertaken throughout this final and most vital process, are presented in detail throughout the remainder of this chapter, and contextualised with respect to the main research aims. The initial eidetic description is considered, at this stage, as “data” of an increasingly conceptual nature, and approached in an increasingly classical phenomenological style.

5.2.1 Simultaneity of sensing and projecting

The particular feature of the initial eidetic description most notably evocative of the natural attitude, was the portrayal of on-the-job thinking as delineated acts, defined by their aim to either sense or project. This was considered to be an objectification of on-the-job thinking into singular acts, that, in their isolation and delineation from each other, and from the wider phenomenon of OJL, appeared unnecessarily teleological. It was, in any case, upon further evaluation, also deemed to be a relatively poor reflection of PFTs’ accounts, which in fact portrayed a more fluid, continuous and uncompartimentalised character to their thinking, the essence of which was certainly not dependent on its objectification into either sensing or projecting, or grasping/transforming, or input/output for that matter. By suspending judgements based on the facts of objective science, epoché reveals a more likely *simultaneity* between the two seemingly antagonistic concepts of sensing and projecting.

The *projecting* of meaning or judgements, appeared to arise synchronously through acts of *sensing* the client. For instance, sensing that a client was uncooperative or challenging involved the simultaneous input of visual information about the client, and

output of the immediate judgement itself, that the client was in fact uncooperative or challenging. While sensing the client to be uncooperative or challenging appears at face value to be a distinctive act of receiving input, it is just as much an act of inseparably projecting quite tangible and immediate output in the form of thoughts and behaviours of both a judgmental and cautious nature, as a direct and simultaneous consequence of the specific cues received. PFT04 described how he would “feel” what kind of person a client is, “how sensitive they are, even the way to motivate them”, within minutes of them walking into the consultation room. Judgement of sensitivity and consideration of motivational strategies here occur synchronously through the described acts of “feeling” and interpreting the client. PFT10 and PFT12 described how they would make instant interpretations of clients based on various aspects of their “body language”, such that the sensing of visual cues from the client was inseparable from the (projected) interpretations/judgements associated with, and therefore inseparable from, those cues. The use of the terms sensing and projecting appear increasingly superfluous upon closer evaluation of such examples, all originally categorised during the analysis process, and therefore *objectified*, as acts of sensing.

Even thoughts that appeared to be primarily based on projecting, and were duly categorised and *objectified* as such, were similarly concurrent with apparent input. For instance, PFT04 described some vivid mental projections involving images of being killed, or having his car damaged. These projections were a result of a threatening phone-call, which continued to play on his mind for an extended period of time following its occurrence. The constant replay of the episode here represents the essential input giving rise to the troubling projections/output. Several PFTs also described the visualisation of alternative responses to situations they had experienced,

should they be repeated. Whether the projection was a vivid visualisation or a relatively simple judgement, it could always be tied to the sensing of either immediate or recalled experience.

In a similar fashion, to clarify this point, the sustained visible image of an object in a mirror can be described as the result of a continuous and simultaneous sensing (input) and projecting (output) of the objects and events in the world to which it attends. In other words, the visible image portrayed on a reflective surface requires both the input and output of (light) energy combined, as a confluence. Indeed, if a surface only performed a singular act of absorbing light (input without output), it would have to be opaque or even transparent, but not reflective, and could not in fact be, a mirror. Likewise if a surface only performed a singular act of radiating light (output without input) it would have to be a light source, like an electronic screen, and could not, therefore, be a mirror either. The thoughts portrayed by a subject here are analogously the result of a continuous and simultaneous sensing and projecting of objects and events in the world, like the image portrayed by a mirror, for without either input or output, they could not in fact be, thoughts.

Chomsky posited the existence of an “internal structure” representing a “perceptual model”, mediating input and output in the context of learning, via an “interplay of innate factors, maturational processes, and organism-environment interactions” (2006, 150). A mirror, in this sense, is analogous to a *main internal structure*, as posited by Chomsky, as a repository of the general concepts mediating input and output, giving rise to visible images (thoughts).

5.2.2 Centrality of general concepts

Further evaluation of the initial eidetic description revealed additional aspects unsatisfactorily resonant with the natural attitude. Thoughts and behaviours were described by PFTs as being significantly influenced by the ‘following’ of existing concepts or ‘main ideas’. Conceptualising general concepts as units of knowledge is reminiscent of a key theme in traditional cognitive science approaches. With regard to their formation, James referred to a “sense of sameness” motivating and underlying typical acts of “conception” (2017, 419). Brentano also referred to this *sense of sameness* in his assertion that the ability to notice, or “be struck by”, phenomena, is influenced by what has been noticed previously (1995, 35). We notice things that we are already aware of more so than something new, because we can make an “association” (1995, 51). Marsick et al. present a similar account of general conceptualisation, in their explanation of processes underlying tacit learning, in which we are said to construct, “mental, emotional, and interpersonal frameworks”, for “processing experience into knowledge”. Such frameworks are then “adjusted or reconstructed”, to accommodate new experiences that do not “fit old models” (2006, 796), and are differentiated via acts of “discrimination or association” (James, 2017).

According to Kolb and Yeganeh (2009, 11), the ability to generalise (form and subsequently use general concepts) allowed our evolutionary ancestors to predict weather, seek medicine when ill, and teach accepted social norms of right and wrong to their offspring. From a Darwinian evolutionary perspective, therefore, the ability of hunter-gatherers to generalise from prior observations and predict promising locations and times to forage or hunt, would have represented a distinctive survival advantage, and modern humans must have indeed evolved, precisely, from those who were most

able to think in this way. A related phenomenon known as *apophenia* is defined by Hammoor and Walker as, “the very human capability to make meaning out of the chaotic data of the world”, or in short, “pattern-recognition” (2017, 44). PFT11 explicitly stated that, “the longer you do something the more you can recognise different patterns.” The tendency towards such efficient categorisation and consolidation of recognised patterns into general concepts, however, further to the emerging discourse on questionable learning outcomes initiated in the previous chapter, is not always desirable.

Kolb and Yeganeh further asserted that the tendency to generalise can result in “rumination, bigotry, fortune telling and stress” (2009, 11), and PFTs accounts indeed corroborated this possibility for undesirable implications of certain generalisations. PFT03, for instance, had drawn the conclusion following a difficult situation that, “clients sometimes do things to get attention... or to get something for free.” While this may sometimes be true, the situation itself, if experienced by other PFTs, or indeed by PFT03 perhaps during another given time period, may have yielded altogether different learning outcomes. According to Brentano, predictive theories in objective science predispose us to notice certain things and not others (1995, 48). During normal acts of thinking in this regard, therefore, what is *noticed* will depend largely on existing general concepts, and might represent a biased, incomplete, or misinterpreted view of a given unfolding situation or episode, giving rise, in turn, to questionable learning outcomes. In a similar example, PFT10 felt that one of her male clients was “looking down” on her, purely on account of her being female. While this may have not necessarily been the case, the experience actually served to further validate this possibly mistaken belief. Indeed, both Eraut (2004) and De Lyon and Cushion (2013)

cite such questionable outcomes as reasons for urging caution in explicitly privileging OJL as a process. Marsick et al. similarly asserted the risk that unexamined learning may lead to the formation of “erroneous beliefs” (2006, 799).

Modern scholarly validation of the centrality of general concepts, and their resulting in desirable or indeed undesirable outcomes, continues to affirm Piaget’s (1936) ideas about conceptual schemata representing the building blocks of knowledge, and constituting central agents of reasoning. Through equilibration, according to Piaget, schemata are either used or changed when processing incoming information, via assimilation and accommodation respectively. Although criticised for originally basing equilibration theory on suggestive observations rather than empirical evidence, from an objective science perspective (Braine, 1962), Piaget’s ideas have sustained a lasting, generative, and mutable presence in the field of cognitive psychology (Burman, 2016). The depiction of the mind as an information processor, as implied by Piaget’s equilibration, is a key premise in cognitive psychology, and inherently based on the assumptions that mental states and processes do exist, and can be studied (Haberlandt, 1997; Ashcraft, 2001). Information processing is indeed a key notion for understanding how we construct, modify, and otherwise use general concepts, and according to Kretchmar (2013), has constituted a significant influence on modern education and learning theory and its subsequent application in general educational practice. While PFTs’ descriptions of their thinking, as reflected in the initial eidetic description, at first appear to support traditional cognitivist approaches like Piaget’s equilibration theory, epoché requires that assumptions arising from objective science (from which cognitivist theories essentially arise), be suspended (Husserl, 1960, 25).

The cognitivist information-processing view of the mind is problematic inasmuch as it permits the existence of the sort of substantial and considerably complex cognitive load involved in the selection and use of thinking types, modalities or styles. In chapter two, it was argued that it is precisely this line of reasoning that has led to the sort of insurmountable complexity identified by Eraut (2004) in discerning thinking in action, and to the inevitable theoretical impasse hampering further study of OJL. The phenomenological perspective, to which epoché re-aligns us, at this stage, provides an alternative view regarding the theoretical assumptions surrounding general concepts.

According to the classical phenomenologists (Husserl, 1960; Merleau-Ponty, 1962; Heidegger, 1982), thoughts always possess a subjective and interpretive character. Merleau-Ponty explicitly cited *interpretation* as the basis of perception itself (1962, 42). To further develop the previous analogy, an image portrayed in and by a mirror will be determined by the topography of its surface, and is liable to become tinted and/or skewed. This tinting/skewing effect, is analogous to the thoughts and behaviours portrayed in and by a subject as wholly dependent on (or tinted and skewed by) existing general concepts, accounting for the distinctively subjective and interpretive character of thinking. Beard and Wilson suggested that “genetic make-up, experiences and disposition play a significant role in making each experience we undergo unique to ourselves” (2015, 30), constituting the “interplay of innate factors” described by Chomsky, represented by an “internal structure” (2006, 150), or the textured surface of a mirror. Any physiological structures responsible for the reposition of existing concepts as lasting impressions of objects in the world, are therefore analogous to the topographical/textured features of the reflective surface of a mirror, in a similar way as, for instance, the surface of a compact disc (CD) or digital versatile disc (DVD), through

physical relief features and surface configuration, giving rise to perceptible phenomena as physical repositories of audiovisual data. Maintaining a phenomenological perspective and holding additional objective assumptions in abeyance, therefore, one might consider a specific thought or behaviour in this view, to be what it is, without the possibility of being anything else, subject of course, to changes being made to the physical correlates of general concepts (analogous to the textured surface configuration of a mirror).

PFT12 rather eloquently referred to ideas (existing concepts) as “echoes” in the mind. Conceived as such, the interpretive veil represented by a reactive textured reflective surface that tints and skews resulting images, must contain lasting impressions shaped by prior images, comparable to the reactivity of a re-writable photographic film. An image (thought), in this view, is therefore wholly a result of an inseparable and essential confluence of objects in the world, and their tinted/skewed representations as concurrently impressed on, and reflected by, the surface of a mirror. The inevitable tinting and skewing that follows, based on prior impressions, illustrates Heidegger’s assertion that mental constructions or articulations are *always* interpretive, “projecting antecedently given being and its structures” (1982, 22).

In the context of mathematical thinking, Schoefeld posited a compelling theory with which he sought to explain how teachers think while solving problems in the classroom. He claimed that if one could know enough about a teacher’s “knowledge, goals, and beliefs”, one could explain (by building a cognitive model) *every* decision he or she makes (2012, 229). A thought as a predefined reflection of objects in the world that is inevitably tinted and/or skewed by existing concepts in a very precise and uniquely

subjective way, directs focus away from the task of having to understand the complex mechanisms by which subjects must “continually choose” (Kolb et al., 1999, 3) thinking types, modalities, or learning styles, as implied by experiential learning theory (Kolb, 1984), dual process theories (Evans and Stanovich, 2013), or models of reflecting in action (Schön, 1983), that are essentially rooted in objective science. Focus is instead redirected, in terms of the mirror analogy, away from mechanisms of selection, and towards the exploration of those deep structures giving rise to the *formation and modification of general concepts*, or, Chomsky’s “interplay of innate factors” (2006, 150).

In his theses on language and thought, Chomsky posited the existence of a system of “base rules”, mapping such “deep internal structures” in his theory of *generative grammar* (2006, 150). If general concepts are wholly influential to on-the-job thinking, then the processes by which such general concepts are subject to *change* (formed and subsequently modified), perhaps according to some form of implied fundamental base rules (like Chomsky’s generative grammar), assumes crucial and central importance for education and learning theorists, as a more worthy research focus than, say, understanding the complex mechanisms by which subjects must “continually choose” (Kolb et al., 1999, 3) thinking modalities, types, and styles, or for that matter, the mechanisms and objectified pathways along which information is assumed to pass during thinking processes, as implied by the information-processing perspective. Any phenomenological description aimed at discerning the essential nature of on-the-job thinking in the context of OJL, therefore, at the deep level of innate structures and their implied interplay, must also account, via continuing use of epoché and suspension of objective assumptions, for the nature of change itself.

5.2.3 Learning as change

Piaget's (1936) equilibration theory explains how information that cannot be processed via assimilation using existing schemata (concepts), prompts accommodation, resulting in schemata being "adjusted or reconstructed" (Marsick et al., 2006, 796), in an apparent form of deep innate interplay. Equilibration theory in turn engenders the need, however, for objectifying and discerning yet deeper and ever more detailed accounts of additional intermediary and/or underlying states and processes, as posited by Baddeley (1990) and Tulving (1972), in the case of working or long-term memory respectively, which indeed yield just such profoundly complex prospective information-processing pathways. This view however, is permeated by a persistent assumption rooted in cognitive science, namely the notion of the mind as an information-processor. The process of change is thereby once again approached using assumptions rooted in objective science, of which epoché urges due restraint.

In the mirror analogy, a specific thought was portrayed as essentially predefined, without the possibility of being anything else pending physical change being affected to actual physiological correlates of general concepts. A somewhat static view is implied here, in what could be more succinctly described as, a thought being what it is and nothing else, *in that particular moment of time*. William James, however, observed that thinking had a distinctive ever-changing nature. Every repeated thought about a given fact, though seemingly the same, is in fact, unique. He postulated that a perception in a moment of time can never be identically repeated or duplicated (2017, 212). James alludes here to the familiar experience of an ever-*changing* procession of moments, and a corresponding *stream* of thinking, or "stream of consciousness" (2017, 165). The term

stream implies *movement*, which is itself, at a deeper more fundamental level, essentially, change. With regard to the important notion of change in the context of OJL, the classical phenomenologists again offer some valuable insight towards the articulation of a more sound final eidetic description. Indeed, how subjects experience change in the world has been a key theme in classical phenomenological works on *temporality* (Husserl, 1960; 1964; Heidegger; 1962; 1982; Merleau-Ponty, 1962).

A common-sense conceptualisation of time would typically involve the consideration of an objective series of quantifiable moments, that proceed independently of human consciousness, or even human existence. Human existence, in this view, would have to correspond to specific time-lines along this grand series of moments. During a given lifespan, a person's consciousness appears to concord with its allocated sequence of successive moments, via the continuous experience of a seemingly proceeding singular slice of time representing the present moment. In the present moment, past moments can be recalled and future moments predicted, or in other words, it can be said to contain, as James described, the "echo of objects just passed," and, "foretaste of those just to arrive," cumulatively, the "germs of memory and expectation" within the "stream" of consciousness (2017, 555). Further evaluation of the problem of temporality using the natural attitude and considering the facts derived from objective science, however, sure enough, uncovers the type of "obscurities" in its fundamental concepts predicted by Husserl (1960, 4). Objectifying an evermore precise present moment, for instance, is as challenging as objectifying an ever smaller precise point in space, where the distinction of past and future become increasingly fuzzy, and the true nature of time and space fall victim, as Newton's gravity (Chomsky, 2006), to the abandonment of the discernment of essence, in favour of a more general scientific

attitude, or according to Brentano, measurement and correlation of objectified points on what is essentially a unity, with no gaps anywhere (1995, 112).

Albert Einstein's (1879-1955) theory of general relativity, for instance, portrays space and time as a single fabric (space-time), constituting a block universe, challenging the notion of a universal time-line, and provoking the inevitable consequence expressed by the philosophical idea of *eternalism*, in which all time (past, present and future) are equally "real" (Landyman, 2007, 325). The assertion of general relativity that time is not universal, but is in fact, rather, entirely relative, renders the concept of unified space-time not only obscure, but almost unfathomable to those unable to conceptualise it at least in purely mathematical terms. Provided the tenets of eternalism are valid, then from a phenomenological perspective, consciousness would have to somehow navigate this singular block-universe structure, and create the experience of a passage of time in which for all change to occur.

Husserl (1964) acknowledged that a privileged *now* moment indeed appears to dominate experience, and proceeded with the conceptualisation of the pure intentionality (directedness) of consciousness as horizontal, incorporating simultaneous qualities of primal impression, retention and pro-tention. In other words, an intuited primal impression of an intentional act can be accompanied by intuiting something that is absent yet retained, as being before in the case of retention, or after in the case of pro-tention. A sentence, according to Husserl, can only be perceived in its totality via an awareness of the temporal order in which words are presented. Without an awareness of what is before or after, a sentence is reduced to a meaningless group of jumbled words. Without such temporal-order awareness, music could not be experienced, nor could any

episodes and situations in a spatio-temporal world for that matter. Here lies the distinction defined by Englander (2016, 4), between the fundamental aim of phenomenology as opposed to objective science, in its exploration of the nature of *intentionality* as opposed to *causality*.

Phenomenology seeks to explore intentional relationships that give rise to a pure seeing, rather than to examine cause and effect relationships between events in which objects in the world interact. Whatever the true and actual structure of the universe and all space, time, or space-time constituting it, the experience of change and the experience of a passage of time in which it occurs, appear to phenomenology as essentially one in the same experience. The scope of any phenomenological description lies precisely in a discernment of the structures giving rise to the experiencing or *pure seeing* of phenomena (in this case temporal change), and not in an explanation of objectified or assumed mechanisms operating in a world we cannot be sure exists in the way natural thinking portrays it, like measuring Brentano's (1995, 112) plurality of points on a line that is essentially a unity. In other words, to explain the processes governing change to concepts is to explain or predict mechanisms governing *causality* across successive moments of objectified time, and not to uncover structures of *intentionality* that give rise to a pure seeing of the perceived results of such change by subjects. In this view, mechanisms governing change to existing concepts are less relevant to phenomenological investigation than mechanisms governing the manifestation of change as a direct experience by subjects.

An objective physical repository of concepts, is akin to, and indeed entirely reflective of, objects in the world. If we cannot be sure about the true nature of objects in the

world (block universe or otherwise), at least we can be sure that intentionality allows us to somehow navigate and attend to them, and manifest itself in everyday temporal conscious experience. According to Husserl's meditations on consciousness and cognition, if everything is doubtful, then the conscious, or *intentional*, cognition that makes that very judgement of doubt, is certain (1973, 23), and the "lifeworld" is thus presented to it as a "phenomenon of being, instead of something that is" (1960, 19).

If intentionality accounts for experience of all change, learning itself is something to be experienced, and appears increasingly as an inherent or interwoven part of the fabric of the objective universe. In this thesis, it has been argued that more valuable insights are to be obtained at this juncture, specifically in addressing the current impasse in the further study of OJL, by investigating the nature of such experience, and uncovering the intentional structures giving rise to it, in accordance with the main aims of classical Husserlian phenomenology. The final eidetic description must, therefore, address how change to general concepts, which is an essential feature of the phenomenon of on-the-job thinking that cannot be imaginatively removed, is experienced by subjects as a temporally-defined object in response to the first research question, and the significance of this in response to the second. Before the temporal, and therefore *changeable*, nature of on-the-job thinking can be fully described with respect to the research aims however, several additional essential features must first be taken into account, and subjected to deeper eidetic analysis before returning to this fascinating problem.

5.2.4 Feelings and feeling states

In their discussion on whole-person learning theory, Yorks and Kasl posited the existence of a "strong bias" in English-speaking society for "subordinating feeling and

emotion to rational, propositional thought and discourse” (2002, 189). Regardless of which is subordinated, Yorks and Kasl’s claim substantiates the apparent separation of thinking and feeling as distinctive or isolated acts, at least in the context of English-speaking societies. The tendency to delineate such acts, has resulted in a poor understanding of the relationship between thinking and feeling, and a portrayal of rational thought as somehow devoid of feeling or emotion, and vice versa. Fetterman and Robinson (2013) further reinforced this notion, by implying the antagonistic nature in which the “head” and the “heart” are often conceptualised, in their study investigating which of the two their participants tended to “follow” in various situations and contexts. The head was designated by Fetterman and Robinson as “rational”, and the heart as “emotional”. When specifically asked to describe their thoughts during episodes or situations at work, however, PFTs often proceeded to describe feelings or feelings states instead, showing that in terms of affective influence on thoughts and behaviours during unfolding on-the-job episodes and situations, rational thinking and emotional feeling were both relevant factors, and perhaps are not necessarily antagonistic within the scope of direct (phenomenally conscious) experience.

The traditional tendency to separate thinking (a mindful act) from feeling (a bodily act) appears to mirror the classic Cartesian dualism which depicts mind and body as ontologically separate, engendering the need for some particular space in the body where the two distinctive “substances” must somehow meet and interact. Descartes (1972) himself had postulated that this union occurred in the pineal gland located near the centre of the brain. While neuroscience has long since disproved this hypothesis, the considerable task of understanding the union between pure subjective experience and

objective reality remains a fundamental problem in modern science, indeed, as it is known, the “hard problem” of consciousness (Chalmers, 1995).

As argued in chapter three (section 3.3.1), however, Husserl's phenomenology fundamentally diverges from Cartesian dualism, and presents an alternate view. Epoché, once again, calls for due restraint in unnecessarily objectifying, isolating, or separating phenomena with a view to quantifying and correlating them in the tradition of objective science. From a phenomenological perspective, therefore, epoché suspends any need to separate thinking and feeling, and instead redirects focus on the subjective experience of their apparent deep reciprocity in the context of OJL, as described by the PFTs. The participants described feelings of happiness, enjoyment, fear, insecurity, anxiety, embarrassment, trust, mistrust, comfort, and discomfort as triggers to various thoughts and behaviours. They also described feelings of amusement and confusion respectively when situations or episodes either did, or did not, play out according to their expectations.

According to Merleau-Ponty, sensations have a “motor accompaniment” (1962, 243) derived from, and rooted in, structures of the physical body, itself an object in the world. Further to the arguments presented in chapter two (section 2.5.3), on the debate in cognitive phenomenology regarding the experience of non-sensory thoughts, it is generally less controversial to contend that feelings are rooted in the body, than it is to propose a physiological basis for pure non-sensory cognition (Bayne and Montague, 2011). Research on feelings and feeling states commonly correlates them with neural processes (Craig, 2002), the sort accounted for by Selye's (1950) GAS theory, which seeks to explain the metabolic and neural/endocrinal responses of organisms to external

stressors in the environment. Considering incoming information as an environmental stressor, GAS theory similarly represents a potentially simplified explanation of an “interplay of innate factors” (Chomsky, 2006, 150) associated with the physiological structural correlates of cognition, as similarly explained by Piaget’s (1936) cognitive theory, if thinking and feeling are to be conceptualised as reciprocal. In his exposition of thinking in action, Eraut (2004) also acknowledged an emotional dimension to decision-making, further corroborating a biochemical basis of thinking and decision-making, and similarly substantiating the notion of reciprocity between thinking and feeling. Indeed, for thinking to be based in, and have any affective influence on, the world, it must be represented by, or correlated with, some sort of physiological structure which, itself, is also an object in the world, and therefore subject to the same explanations posited for any other physical process.

PFTs described their experience of various thoughts and feelings as occurring in various grades of magnitude and persistence, adducing the role of physiological regulation (as posited by GAS theory) according to the magnitude and persistence of perceived stressors on the organism, in turn resulting in various degrees of intensity of impression on implied conceptual data reposition structures. In other words, magnitude of intensity in the experience of the activation (and simultaneous modification in the case of their storage on a malleable surface) of certain concepts, concords with the magnitude of biochemical sensory-based activity as explained in GAS theory. PFT04 described how following a threatening phone call from the husband of a female client, he experienced “palpitations”, and remembered the feeling, “as if it were today.” PFT05 described how a stressful issue had, “literally taken over [his] life,” for a “couple of months”. According to GAS theory, magnitude of a stressor would

represent, in the Darwinian sense, significance with respect to its implications on safety or survival. Thoughts are thus portrayed by the participants as similarly connected, as are basic sensory-based feelings or feeling states, with a sense of safety or survival.

Elpidrou and Freeman succinctly defined feelings as ways in which our interactions with the world are “qualitatively manifested to ourselves” (2014, 511). The graded quality of participants’ manifested qualitative experience of both thinking and feeling in terms of magnitude, concords with Baars and Franklin’s (2007) conceptualisation of conscious awareness as a “graded property”, reducing the selectivity of conscious awareness simply to the experiencing of various grades of biochemically accented physiological activity, where the neural activities of higher magnitude represent those of which one is “consciously” aware. This view of consciousness essentially emphasises the notion of a biochemical basis of thought. In his attempts to determine the main elements of consciousness, Brentano similarly discussed a sensitivity of conscious awareness to spatial magnitudes and thresholds (1995, 64). Some spatial or qualitative factors of phenomena are either too small to be noticed, or otherwise represent grades of magnitude that lie outside the threshold to which conscious awareness is able to attend (1995, 65). In this regard, visual, auditory, and tactile sensory perception all concord with specific finite thresholds, which indeed, vary according to species, or even among humans themselves, subject to various disorders, like autism, which is known to alter such sensory thresholds (Larsson et al., 2017).

The depiction of thinking and feeling as fundamentally similar and interrelated, despite being presented via concepts associated primarily with objective science, adds a crucial emerging dimension to the final phenomenological eidetic description. Like feeling,

thinking is thus depicted as an *object* in the world. Further to the previous discourse on change, it must be an object with both spatial and temporal qualities, based on physiological structural correlates of existing concepts in space, that are also subject to constant change over time. The emphasis of phenomenological description is thereby shifted to the intentional structures that give rise to the conscious experiencing of such objects, hereby construed precisely as objects in the world, and their subsequent conscious manifestation as the experienced phenomenon of on-the-job thinking. On-the-job thinking has, so far, been described as simultaneous sensing and projecting through the subjective and interpretive veil of existing concepts. Cumulatively, the world, the body, physiological correlates of existing concepts, the biochemical substances responsible for affective feeling states, and any temporally-defined processes taking place therein, must form part of the fabric of the universe (whatever its true objective structure), to which the intentionality of consciousness (giving experience a primal impression with simultaneous retention and pro-tention qualities), duly attends. A discussion of consciousness as experience of objects in the world, meanwhile, represents another more difficult problem, should one consider the notion of experiencing *oneself*, engendering further reflection on a key theme presented in the initial eidetic description, namely, that of internal interaction.

5.2.5 Internal interaction

The initial eidetic description, based on the four final main themes, cited interaction as occurring externally between subjects and their environments, as well as internally between subjects and their own selves. Greeno's (1997) definition of the *situative* perspective to understanding thinking in educational psychology, which is considered inclusive of both the behaviourist and cognitive paradigms, emphasises *participation* in

communities of practice, individual sense-making, and the development of individual identities. The situative perspective, therefore, posits *interaction* as a main catalyst to thinking, both externally (within communities of practice), and internally (in acts of sense-making and developing identity). Among the eight superordinate themes, thinking arising from self-talk emerged as particularly prevalent as a form of such internal interaction. In the field of performance enhancement and sports psychology, self-talk, also known as *inner speech*, has been shown, experimentally, to have positive effects on motivation and performance (Kahrović et al., 2014; Gregerson et al., 2017). Indeed, Kahrović et al. (2017, 52) presented self-talk as one of the five fundamental “pillars” of sports psychology.

Wallace et al. (2017) similarly showed that participants undergoing a problem-based thinking task (the “Tower of London task”, designed to test executive functioning), while distracted by either verbal articulation of given words “out loud”, or foot-tapping in time to a metronome, performance was more adversely affected by the former measure, designed to inhibit inner speech, than it was by the latter. While Kahrović et al. (2017, 51) defined self-talk or inner speech simply as, “having a conversation with oneself”, research has typically focused less on defining or discerning its essential nature, and primarily on investigating its effects on executive functioning and performance. In other words, research on self-talk or inner speech has focused on how to do it, and how it helps, more so than on why it occurs, what it actually is, or how it might help in further understanding the wider phenomenon of thinking. Wallace et al. (2017) based their work on the assumptions of Lev Vygotsky (1896-1934), providing an important clue for the sourcing of additional insight on the essential nature of self-

talk, or how and why it is conceptualised the way it is, at least in the context of modern education and learning theory.

Vygotsky described the relationship of thought to word as, “not a *thing* but a *process*, a *movement*.” (1987, 251). He further stated that the nature of this process develops through childhood, development that, incidentally, represented the main focus of his work. Like Piaget’s seminal work on cognitive development in children, that yielded valuable insights about the nature of cognition in the context of cognitive science research, Vygotsky’s ideas have proven similarly influential in developmental psychology and education theory. As later similarly postulated by Chomsky (2006), Vygotsky positioned the role of language as central in acts of thinking. Thoughts have movement, they “unfold” and “unify”, establishing “relationships between one thing and another”. More importantly, they are not “*expressed*” as much as they are “*completed* in the word” (1987, 252). In other words, thought is actively restructured as it is transformed into speech. Vygotsky’s insights here concord with modern findings in the field of cognitive science, that have succeeded in demonstrating the malleable nature of thoughts and memories. The retrieval and expression of memories place them in a “labile” (Lee et al., 2017, 531) or changeable state, suggesting we don’t so much *recall* as we do *reconsolidate* through acts of thinking.

According to Vygotsky, a word relates not to a single object but to an entire “group or class of objects”, as a “generalisation” (1987, 45). A “verbal act of thought” refers to such a generalised word meaning, and essentially differs from a thought based on sensation or perception. This view supports the distinction later made by Baddeley (1990) and Tulving (1972), in their contributions to working and long-term memory

models, which clearly integrate the significance of language in thought. In the case of working and long-term memory systems respectively, the phonological loop and declarative-semantic memory structures have a distinctive basis in language, as opposed to their non-linguistic counterparts (the visuospatial sketchpad and procedural memory). Chomsky similarly postulated a deep reciprocity between language and thought by positing the study of language as a prospective avenue in future research aiming to uncover the character of “mental processes and the structures they form and manipulate” (2006, 58). In terms of the processes governing the use of such language-based memory systems, Vygotsky suggested that while external speech transforms thought into word, internal speech works in the reverse direction, from “without to within”, or as the “evaporation of speech in thought” (1987, 258). Here, the purpose of internal speech is differentiated from that of external speech, revealing the reconsolidatory nature of thinking via inner speech, and supporting later assertions of the importance of inner speech in its influence on performance in cognitive problem-solving tasks (Wallace et al., 2017).

Vygotsky further accents this distinction between thinking types by discussing the nature of written “speech”, which represents the opposite end of a spectrum to inner speech, whereby thoughts are maximally “expanded” (1987, 272). In other words, all forms of linguistic expression interplay with thinking, with inner speech representing the quickest and most abbreviated reconsolidation of generalised concepts or “word meanings”, with verbal and written speech representing more expanded manifestations, for the purpose of external communication with others, as opposed to with oneself. Thinking as either internal or external interaction respectively, in this sense, is defined by Vygotsky as, “intra-mental function”, and “inter-mental function” (1987, 259). For

Vygotsky, all types of speech ultimately attend to word meanings or generalisations of concepts, and, “what is contained simultaneously in thought unfolds sequentially in speech”. He uses the elegant analogy of thinking as a cloud that gushes a shower of words (1987, 280).

A fascinating aspect of Vygotsky’s ideas about language (and his resulting rain cloud analogy), is his portrayal of the containment of content in thought as an object, and the use of language as a sequential expression or dissemination of that content from the object. He thereby portrays the notion of a seemingly tangible object-body of word meanings (content itself constituted by general concepts). A general concept-store (object-body of word meanings), is therefore presented as a distinctive and spatially-defined object in the world, and speech, which according to Vygotsky, is a form of thinking, as a temporally-defined object tangentially related to the general concept-store from which it “gushes”. The term *tangential* is used here in the mathematical sense, where constructing a graph consisting of X and Y axes permits the visualisation of interaction between objectified phenomena that exist in two separate planes or dimensions. The temptation to revert to objective science conceptualisations at this point, therefore, is once again palpable.

The distinction between spatial and temporal dimensions remains a potent characteristic of qualitative human experience, exceedingly difficult for natural thought to perceive in any other way in a world that is qualitatively and unequivocally spatio-temporal. The main argument here, however, from the phenomenological perspective, is that regardless of whether they are spatially or temporally defined, objects of perception are nonetheless, objects in the world, that must ultimately be attended to by the

intentionality of consciousness. How a *subject* comes to interact with such objects retains focus, congruent with the main aim of phenomenology, on intentionality, or rather, on the notion of consciousness and the intentional structures that permit its relatedness to the world. The articulation of a final eidetic description cannot proceed at this juncture, nor can a discernment of the possibility of a subject interacting with herself, without some discussion on the difficult and substantial problem of consciousness (of a subject) itself, further to the discourse in chapter three (in section 3.3.2), on the impossibility of apparently any object other than consciousness being able to relate directly to itself.

5.2.6 Re-situating consciousness

Vygotsky explicitly stated that “thinking and speech are the key to understanding the nature of human consciousness” (1987, 284). The conceptualisation of thinking in learning theory as dependent on the presence or absence of consciousness, a phenomenon that remains poorly understood, was cited in chapter two as partly responsible for the current impasse in studying OJL. Carruthers defines the traditional “common-sense” understanding of conscious thought, as based on the ability to experience “mental events of which we are immediately and non-interpretationally aware” (2007, 199). It is precisely this definition, according to Carruthers, that is responsible for the problematic distinction between conscious and unconscious thought as implied by dual-process theories (Evans and Stanovich, 2013). It was argued in chapter two, that a phenomenological description of on-the-job thinking might help address this difficulty, and the first research question was framed accordingly, in pursuit of a phenomenological description that might suitably underpin modern theories

related to OJL, and potentially constitute part of its clearer and less problematic theoretical foundation.

The developing eidetic description based on PFTs' descriptions of their on-the-job thinking, combined with the consideration of thinking and speech as a key to further understanding consciousness, as suggested by Vygotsky (1987, 284), prompts a deeper discussion of on-the-job thinking with respect to consciousness. Vygotsky stated that, "consciousness of sensation and thinking are characterised by different modes of reflecting reality" (1987, 284). Thinking and sensation are characterised here as modes of reflecting *objective reality*, or in other words, reflections of objects in the spatio-temporal world. Brentano similarly differentiated specifically between three modes of conscious perception, namely consciousness of "place, quality and temporal determination" (1995, 98). While a singular object more familiarly perceived by the senses as *spatially* defined exists in the world, so too does thinking, although due to its process-based nature, exists as a *temporally* defined object. Vygotsky refers to consciousness as "consciousness of" the mode of thinking, as consciousness not *in* or *through* thinking, but consciousness *of* thinking. Thinking, just like the wider phenomenon of learning, is thus characterised as part of the fabric of the universe to which the intentionality of consciousness attends, giving rise to everyday subjective and interpretive experience.

In thinking of any object in the world, according to Brentano, such an act of thinking has that object as its *primary* object, and itself as its *secondary* object. There is an intentionality of consciousness, therefore, that is directed at both the primary object, and the act of thinking itself (Brentano, 1995, 26). In other words, when we are aware

that we are thinking of, say, a table, we are aware of the table, and we are aware that we are thinking. To consciously and interpretively experience thoughts of any kind, a subject would need what Carruthers refers to as a “mind-reading faculty”, which is sensitive to perceptual input like visual imagery and speech, including *internal* visual imagery as well as one’s own inner speech (2007, 204). According to Carruthers, we frequently employ this same mind-reading faculty in interpreting the thoughts of others. If someone, for instance, asks for directions to a particular church, regardless of the precise structure of the verbally-articulated question, we “*see or hear*” their thoughts as *wanting to know*, or *wondering*, where the church is. Upon seeing someone inserting a key into a door, we “*see or hear*” their thoughts as *wanting* to open the door. This same faculty is, of course, also employed in interpreting our own thoughts. Likewise, if we are engaged in manipulating luggage to fit into the boot of a car, we “*see or hear*” our thoughts as *wondering* how to fit the luggage in, and upon pushing the large suitcase towards the back of the boot, we “*see or hear*” our thoughts as *deciding* to push it so (2017, 243).

Carruthers, therefore, argues that, “knowledge of one’s own thoughts is just as interpretive as is knowledge of the mental states of others” (2017, 232), and what’s more, that neuroscience research indicates involvement of the same cortical networks in knowledge of oneself, and knowledge of others (2017, 233). The fallibility of self-attribution shows that for the mind-reading system, while indeed having more access to one’s own thoughts than the thoughts of others, this access is still not direct (2007, 205). If it were in fact direct, then “self-deception”, or false beliefs about oneself (Baron, 2008, 71), would be far less common phenomena than they actually are. According to Carruthers, the mind-reading system contains only a “limited, highly

simplified, model of its own operations”, accurate enough for “everyday purposes of prediction and explanation” (2007, 211). He adds that the interpretive process is “swift and generally reliable, to the point where one routinely experiences oneself as entertaining thoughts of various kinds” (2017, 248). PFT10, for instance, described how she was able to sense that a particular client “didn’t want to be there”, although she was unable to explain exactly how she knew or how her own thoughts had arrived at such a conclusion, showing how her mind-reading faculty, at the time, had only limited access to both her client’s thoughts, as well as her own.

The notion of experiencing oneself as entertaining thoughts, concords with Vygotsky’s reference to “consciousness of sensation and thoughts” (1987, 284), as well as Husserl’s view of intentionality as “*relating to*” (1973, 43) objects in the world, objects that must also include temporal sequential thought-processes and the existing concepts implicated therein. Carruthers adds that the interpretive knowledge of our own thoughts is “grounded in awareness of both our own overt behaviour and covert sensory cues” (2017, 229), emphasising context, and corroborating also the interpretive and “constructive” aspect of this relatedness asserted by Heidegger (1982, 21).

This view, however, does not concord with Vygotsky’s argument in favour of the existence of *affective* mental processes (1987, 48). Vygotsky theorised that cognition must account for a subject’s volition and conscious affective control over their own thoughts and behaviours. PFT10’s comparison of her reflections to a “broken record”, PFT06’s report of a particular thought “playing on (her) mind for days”, and PFT12’s statement on the assumed origin of self-questions and statements, that “they just start automatically”, however, indicate a diminished sense of control over the thoughts

described. They resonate increasingly with Carruthers' notion of merely experiencing oneself as entertaining various thoughts, rather than Vygotsky's assertion that cognition must account for affective volition, raising still deeper questions about conscious will and control.

Carruthers (2007) argues in favour of the *illusory* nature of conscious affective will through thought, and questions how we can be any more authoritative over our own thoughts than we are over the thoughts of others, given that in both cases we appear to be able to experience them only indirectly and interpretively. This results in the seemingly profound implication that the role of the subject is essentially shifted from one of *causing* thoughts to merely *experiencing* them. The feeling of control as a tangible and compelling feature of the every day subjective experience of thinking, according to Carruthers' (2007) narrative on the *illusion of conscious will*, in this respect, indeed, appears increasingly illusory. Research in psychology has positively correlated the "illusion of control" with non-depressed subjects, or in other words, the feeling of a *lack* of control has been positively correlated with depression (Alloy and Abramson, 1979, cited in Baron, 2008, 191), showing how an *illusion of conscious will* would be a justified and important characteristic of the overall qualitative experience of thinking, at least from a Darwinian perspective.

The notion of consciousness *of* thinking and sensation, thereby locates the spatially-defined body, brain, objects in the world, and all temporally-defined intermediary processes occurring therein, collectively as objects in the world, readily constituted and available for subjective experience (through intentionality). To experience readily-constituted thoughts without consciously causing them, suggests also that all of the

stages or processes involved in their formation, must also have happened not only beyond the scope of one's conscious will, but also outside the scope of one's conscious awareness. They are thus presented, in their various already-formed configurations, ready for attendance by intentionality, giving rise to everyday subjective interpretive experience, a view that would concord with the notion of intentionality attending to an already-configured block-universe structure. A unified object of perception, appearing as a whole, yet constituted by apparent parts, is a central idea in *Gestalt theory*, as originally posited by Max Wertheimer (1880-1943). The interpretation of the whole and the interpretation of its apparent parts, according to Gestalt theory, must be mutually concerted (Guberman, 2017, 7-8) in the context of subjective experience. Vision, speech, music, and even apparent motion, are *objects* of perception, while constituted by objectified parts, are presented as whole phenomena to conscious experience.

In her reflections on the origin of self-statements and self-questions, PFT11 cited "intuition" or a "gut feeling", influenced by "how things are working out in your life... how you go through your day feeling", alluding to the unconscious processes occurring seemingly beneath the surface of one's awareness throughout a given period of time, only to eventually, in the words of PFT07, move into conscious awareness as a "click" in the mind as wholly constituted thoughts presented to conscious experience. PFT12 described how various ideas often came to him "out of the blue". Such unconscious thinking, according to Carruthers, works "behind the scenes, generating and controlling the sensory-based contents that figure in working memory and the stream of consciousness itself" (2017, 242), as constituted objects. The "behind the scenes" aspect of such processing also corroborates the phenomena of implicit memory (Reber, 1989) and blind sight (Weiskrantz, 2002), discussed previously in chapter two. PFT06

described her experience of automatic quick-thinking upon two separate occasions, where clients with medical conditions lost consciousness (fainted) during her sessions. On the second occasion, she described how she “bear-hugged” the client, as opposed to having grabbed one arm, as she had done on the previous occasion. Despite never having deliberately decided to do this, she described the different automatic reaction in the second incident as having been a result of the first, even though any connection between the two must have occurred entirely *behind the scenes*, and was only reported during her interview in retrospect, or, *interpretively*.

This discussion, at face value, appears to support the problematic notion of substantial unconscious, as opposed to conscious, thinking, as implied by dual process theories (Evans and Stanovich, 2013). In chapter two, dual process theories were cited as partly responsible for the relegation of the study of OJL to methodological futility, on the premise that it occurs primarily in the second category, beyond our reach, or *tacitly*. From a phenomenological standpoint, however, the conceptualisation of thinking itself as either conscious or unconscious, has already been called into question throughout this section. According to Carruthers, in terms of traditional conceptualisations of consciousness based on thinking of which we are “immediately and non-interpretationally aware” (2007, 199), we are in fact not conscious of any of our non-sensory thoughts whatsoever, and that all conscious thinking and reasoning requires a “sensory-based format, involving imagery of one sort or another” (2017, 242).

In this view, thinking is (phenomenologically) reduced to an action carried out in a spatio-temporal world, involving objects and the objective processes mediating them (which are continuous and on-going in living organisms), themselves existing internally

and externally in relation to the experiencing subject. Consciousness itself can be understood, in this view, as intentionality attending to objects and their intermediary processes, not as an object itself, or *part* of an object, but instead only as a *pure seeing* of those objects. The phenomenal view of consciousness, indeed, defines it as a direct seeing, a conscious experience that is always conscious, and not as an objective quality of some objects and not others, as would be the case in designating a thought as either a thing with a conscious quality, or a thing with an unconscious quality.

Discussions on consciousness (which after all is a poorly understood phenomenon), tend to revolve precisely around where it is *positioned* in the conceptualisation of thinking and learning processes. The shifting of such a position in any conceptualisation of thinking, appears to alter its description, in terms of how helpful or “profitable” as an analogy or metaphor (Roediger, 1980, 231) it tends to be in facilitating the negotiation of given theoretical obstacles. In the case of this study, a more fruitful re-conceptualisation of on-the-job thinking is sought to provoke a renewal of efforts in the exploration and deeper understanding of the wider phenomenon of OJL, calling for a re-positioning of consciousness in the final eidetic description.

Carruthers’ view that *thoughts* are always unconscious (2007, 199), accentuates their essential nature as objects in the world, facilitating the view that the *experience* that navigates such a world of objects is, on the other hand, always conscious. Stannard likened experience of the block universe to a video recording, viewed on a frame by frame basis (2010, 93). Tom Hatherley Pear (1886-1972) similarly compared memory recall, in audio-visual playback terms, to playing a record on a gramophone (Pear, 1922, cited in Roediger, 1980, 234). If thoughts are objective processes in a block

universe, recorded on a record in the case of Pear's analogy, then consciousness is analogous to a gramophone needle. In this view, conscious experience itself, which by its very nature is always conscious, is achieved through the attendance of intentionality to an objective world of things, people and interactions, or in other words, to a world of objects, subjects (physically constituted also as objects) and any scripted and temporally defined processes operating therein.

The gramophone needle analogy, however, is somewhat misleading, for two reasons. First, like the global workspace theory analogy of a spotlight shining on a stage that only illuminates a narrow field of consciously perceived experience (Baars and Franklin, 2007), the needle analogy appeals to the conceptualisation of the whole notion of conscious experiencing as a spatially defined phenomenon, with a smaller object physically navigating a larger one. In its attendance to the spatio-temporal world, conscious experience actually takes on the more familiar characteristic of, as famously described by William James, a “*stream* of consciousness” (James, 2017, 165), proceeding “frame by frame” (Stannard, 2010, 93), rendering it primarily *temporally*, rather than *spatially* defined. Second, the gramophone analogy is confusing because the record must contain all the objects, subjects (physically constituted also as objects) and any temporally defined processes operating therein that constitute the world. The subject, in this analogy, is either positioned outside the system listening to the music, experiencing the world (the record), through the intentionality of consciousness (the gramophone needle), or, trapped inside the record along with all the other objects in the world, thereby unable to hear (experience) the music. Either way, the analogy raises a fundamental problem concerning where *subjective* conscious experience is precisely located in the system.

The problem of the existence of an ontologically distinct and pure subjectivity was itself described by Chalmers (1995) as the “hard problem” of consciousness, in comparison to relatively easier problems that can be theoretically discerned in alternative terms by using, say, information processing models. By Chalmers’ definition, therefore, how consciousness relates to OJL is considered a relatively easy problem, because it does not require a resolution of the hard problem itself. In other words, any phenomenological description of on-the-job thinking in the context of learning would have to show how consciousness is involved, or where it is positioned within, the description, in a way that does not present insurmountable theoretical problems, and not what consciousness actually is. In this respect, a re-situating of consciousness within the phenomenon of on-the-job thinking, or more specifically its re-situation *outside*, or separate from, the objects that constitute the world (so long as they can be phenomenologically conceptualised as objects), appears to mitigate the insurmountability of the theoretical impasse represented by the tacit learning problem. It does, however, raise some additional problems requiring yet deeper evaluation, specifically, the problem raised here, of where, or indeed, what, the *self* actually is, in the context of everyday OJL experiences.

5.2.7 Locating the self

The relatively simplistic view conjured by an initial survey of the gramophone needle analogy described in the previous section, renders the subject as external to the world, attending to it from the outside. If objects can only exist in the world, and not outside it, then precisely locating and defining the *subject* thereby becomes a challenging problem, creating the sort of “infinite regress” portrayed by Dennett and Kinsbourne,

suggestive of a system in which a conscious homunculus (small person) must somewhere reside as the ultimate perceiver and decision-maker (1992, 185). The world of objects, in this sense, must end somewhere, without the possibility of something being positioned outside it. In the descriptions of PFTs, the prospective presence of a homunculus was most conspicuous in the phenomenon of self-talk/inner speech, drawing attention once more to the problem of clearly discerning internal interaction, and Vygotsky's assertion of thinking and speech as the "key" to understanding the nature of human consciousness (1987, 284). In this section, internal interaction is subjected to more intensive reflections with a view to addressing the homunculus problem.

Vygotsky (1987) defined speech as the completion of thought, and chartered its development in children via certain stages, initially as serving the purpose of simple communication with others. During the egocentric phase of development, according to Vygotsky, children typically exhibit instances of solitary verbalised speech, which as a result of the development and consolidation of abstract conceptual thought, is eventually silenced and directed inwards to form the type of inner speech exhibited by adults. If speech originally develops as a means of communication, then, as an activity, it presupposes, as does all communication, the existence of a sender and receiver, or two separate entities. Whether speech occurs between subject and other, or subject and subject, then who exactly are the parties to the subject-subject variety of speech? This question was posited to the participants in later interviews following the repeated surfacing of self-talk as a phenomenon. Which is the ultimate perceiver, or in other words, which is the *real* you?

Locating or defining the *real you* or *homunculus* was explicitly attempted during at least one of the later interviews. PFT11, a Yoga instructor with a special interest in Hinduism and mindfulness, was particularly insightful in this regard, and the opportunity was duly taken to explore the area in more depth. She described self-talk and self-reflection as connecting with a “deeper part” of herself. When probed further, she described that deeper part of herself as her “soul”. When probed yet further, she defined her soul as, “the energy that surrounds me”. When subsequently asked, “where are *you* in this energy?”, she responded, “I haven’t defined that yet”. Of course the idea of there actually being a *real you* somewhere inside this energy in the first place, was a specific construct imposed here by the interviewer, essentially leading the participant, and diminishing the legitimacy of any further comments she made, since they would not be wholly representative of what she would have originally and fundamentally wished to convey. At this juncture, however, PFT11 referred to a specific construct of her own, evoking the idea of “reincarnation”, and an “everlasting energy”. When again asked, “where are *you* in this everlasting energy?” she responded, “I’m a part of that, my spirit is”. The idea of the deeper part of self being a soul, itself part of a deeper energy, or an “everlasting” energy, further comprised by a combination of many spirits, would lead in turn to discerning, at an ever deepening level, the essential nature of such spirits, and so on, a hefty pursuit strongly resembling an “infinite regress” (Dennett and Kinsbourne, 1992, 185).

The classical phenomenologists again provide some important insight in this regard. It appeared far less problematic, at this stage, to assume a phenomenological position based on Heidegger’s (1982) notion of *being*. Pure subjectivity, in this sense, is not an experience *by a subject*, but rather an interpretive experience (through an interplay of

existing concepts as objects in the world) of *being a subject*. From the objective view, the subject is an object (or an entire collection of complex physiological objects) among other objects in the world. According to Husserl, the “life-world” (and therefore also the objects that appear to constitute it), is a “phenomenon of being, instead of something that is” (1970, 13). From the purely subjective view, therefore, the subject is nothing more than the experience of *being a subject*, that arises from the attendance of consciousness to a confluence of objects in the world. Among those objects in the world that are particularly influential on the very real experience of being a subject, or being a *self*, are among the most prominent of all concepts referenced by PFTs as influential to their thoughts and behaviours, the self-concepts.

The self-concept has been defined in an abstract and conceptual way, as a “seemingly intangible construct” (Rogers, 1961, 256), constituted by a “network of interrelated ideas” (Baumeister, 2005, 247) about oneself, made of meaning, symbols and language. Rogers continued to state that the concept of self is, “much less frequently a perceived object, and much more frequently something confidently felt in process” (1961, 153). James similarly referred to the self-concept as a “multicomponent construct”, that is “felt” in any given moment within on-going streams of thought (2017, 362). The *feltness* of self here concords with Heidegger’s notion of the experience of *being a subject*.

The *type* of person or professional a PFT saw themselves as, was a prominent motivating factor, as well as retrospective justification for decisions taken and courses of action followed. PFTs generalised themselves as introverts, perfectionists, or the “type” of person or professional that usually reacts in a certain way, or carries out certain

behaviours. They also cited alternative roles as being influential to the type of trainers they were, for instance being both a “friend and a teacher” to the client (PFT10), or a “coach, good listener, good speaker, and advisor” (PFT04). They also nominated various traits as being part of their character, such as “taking things personally” upon making a mistake (PFT04). Being a subject, or more specifically, being a particular type of subject, showed, from the participants’ point of view, the centrality of self-concepts as objects in the world, and their propensity to be “felt in progress”, as a fundamental characteristic feature of pure subjective experience.

Throughout this chapter so far, some of the researcher’s reflections resulting from an deep eidetic analysis of the initial eidetic description, have been presented in the spirit of methodological transparency. In the next section, a convergence is attempted, whereby the results of all the reflections discussed so far, are consolidated with a view to their development into a coherent final eidetic description, ultimately representative of a less problematic depiction of the phenomenon of thinking in the context of OJL.

5.2.8 Towards a final eidetic description

Sensing and projecting, through imaginative variation, were conceptualised as simultaneous and inseparable in a way that did not cause the overall phenomenon of thinking to collapse. In other words, separating sensing from projecting was not essential. The notion of ‘following’ main ideas or existing concepts as a volitional action was also challenged and imaginatively removed, based on the premise that existing concepts shape, tint, or skew thoughts and behaviours into forms that, in any singular temporally-defined moment, are what they are and could not be anything else. Grades of magnitude and persistence were ascribed directly to existing concepts

themselves, forged based on their significance to safety or survival in accordance with biochemical processes.

A further reduction can be made at this juncture, since, through the use of *epoché*, one might also question the necessity to delineate thinking from the very interactions in which a subject is engaged that seemingly give rise to it. Thinking acts in themselves may be reduced to, or considered one in the same as, interactions both internal and external to the subject, primarily as temporal processes mediating the interplay between objects in the world (including internally and physically stored concepts and the external objects of which they are skewed or tinted impressions). Such interactions (that are causal/sequential in nature) form part of the fabric of the universe (whatever its true objective nature might be) to which the intentionality of consciousness attends, giving rise to subjective temporal experience (which includes experience of change). Subjective experience was further clarified as a pure seeing, and not in terms of an ultimate perceiving subject. Subjective experience was depicted as felt not *by* a subject, but rather in itself as an experience (in the Heideggerian sense) of *being* a subject in the world, as a confluence of objects and their tinted/skewed reflections in the general and self concepts that are impressed on subjects as *beings* in the world.

The mirror analogy was used to clarify and illustrate some of these ideas, since interpretive thoughts were portrayed as wholly dependent on existing general concepts (including self-concepts), just as the tinted/skewed image portrayed in or by a mirror is wholly dependent on the textured reflective surface giving rise to it. The analogy, however, must incorporate the aspect of the initial eidetic description based on thinking as both internal and external interaction, where *internal* refers to interaction of objects

inside (or *constituting*) a subject, and *external* refers to interaction between objects both inside and outside a subject, or as termed by Chomsky, “organism-environment interactions” (2006, 150). Beard and Wilson defined experience, in this sense, as a “sense-making process of active engagement between the inner world of the person and the outer world of the environment” (2015, 4). Brentano alluded to the notion of the self as object/s in the world in his assertion that exploring the elements of consciousness, “acquaints us with the objects of our own self” (1995, 78). In other words, the analogy must accommodate a means of a mirror system relating to itself, as well as to the outside world, in a way that describes the very tangible and familiar nature of the experience of *being a subject in the world*, and without falling into an infinite regress requiring the existence of a homunculus. It must be able to set itself and the concepts it comprises, including self-concepts, in a pure seeing. In analogous terms, this may be accommodated by conceptualising the addition of a second mirror positioned in front of the first. A textured and malleable reflective surface could, in such a conceptualisation, see or experience itself in the case of internal interaction, as an object in the world through its own tinted/skewed interpretive veil. To this effect, the analogy can be clarified and developed further.

A descriptive analogy of being a subject with a capability for on-the-job thinking, therefore, based on a mirror with a textured surface representing a tinting/skewing conceptual data repository, could be further clarified and described by imaginatively or “creatively” (Van Manen, 1996) conceptualising a parallel dual-mirror system, as seen in a typical interview/observation room set-up in the law-enforcement context. In such a set-up, adjacent rooms are separated by a one-way (AKA semi-silvered or semi-transparent) mirror. While the suspect is questioned in the interview room, law

enforcement or intelligence personnel typically monitor proceedings from the adjacent observation room. The one-way mirror separating the two rooms will appear as a mirror from the perspective of those inside the brightly-lit interview room, and as a transparent window from the perspective of those inside the dimly-lit observation room. The one-way mirror is semi-silvered, as opposed to fully-silvered, meaning that its appearance as either a mirror or a window, depends entirely on the brightness of lighting conditions either side of it.

In this analogy, the (empty) interview room represents the internal domain of the subject, with the main textured mirror giving rise to a visible tinted/skewed image akin to thoughts, positioned on the far-side wall directly opposite and parallel to the one-way partitioning mirror. The observation room here represents the external domain. In chapter six (section 6.2.4, illustration 2), a visual illustration of this set-up is presented.

Cumulatively, both rooms are objects in the world. Inside the interview room (the subject), the standard lighting set-up (interview on-going), would permit the setting up of concepts (including self-concepts) impressed upon the main mirror in a *seeing* of themselves via the two parallel mirrors, necessary for internal interaction to take place as a temporally-bound process, *experienced* repeatedly as change through successive frame by frame moments of time. The setting up of its own concepts in a pure seeing, accounts for the consciousness *of* thoughts, through the same unavoidable tinted/skewed interpretive veil that renders all experience (of self or the world) wholly interpretive in the manner espoused by Heidegger, interpretive, even of itself. A possibility of a setting up of concepts themselves in a pure seeing, similarly corroborates the notion of *metacognition* which has been defined as “thinking about

thinking” (Cromley, 2000, 48; Kretchmar, 2013), or in other words, thinking as its own object. The abstract notion of infinite regression here, is indistinguishable from the palpable appearance of visual infinity one experiences upon looking at one of two parallel mirrors.

From the perspective of the subject, the shift between internal and external interaction is represented by a shift in the lighting conditions of the observation room. An equally brightly-lit observation room would permit the image (thoughts) portrayed in the main mirror, to once again become a tinted/skewed representation of objects out in the world, rather than a tinted/skewed representation of itself and its own concepts, essentially removing the one-way partitioning mirror. A crucial aspect of the main mirror in this analogy, is its ability as a concept-repository to reflect, and simultaneously be impressed upon by, objects out in the world. It is precisely the accumulation of such impressions that constitute the tinting/skewing interpretive veil, “projecting antecedently given being and its structures” (Heidegger, 1982, 22).

The interview-room analogy focuses on the perspective of the subject, and seeks to describe the simultaneity of sensing and projecting as they give rise to thinking (image portrayal) that is wholly defined by the confluence of existing concepts as tinted/skewed (interpretive) *reflections* of objects out in the world (in the observation room), and the objects in the world themselves, during both internal as well as external interaction. The parallel mirror configuration presents a visual representation of Brentano’s description of the intentionality of consciousness, and its tendency to relate to objects in the world, as well as to itself.

“The fact that there is no consciousness without any intentional relation at all is as certain as the fact that, apart from the object upon which is primarily directed, consciousness has, on the side, itself as an object. This is, in an essential way, part of the nature of every psychical act.” (Brentano, 1995, 26)

In his description of consciousness, which according to Chalmers “stubbornly resists” (1995, 200) scientific explanation, Merleau-Ponty used field theory to conceptualise his notion of a “phenomenal field”. Interactions between subject, body, and objects in the phenomenal field, represent the phenomenon of consciousness in the same way as interactions between objects in gravitational or magnetic fields represent the phenomena of gravity or magnetism, respectively (1962, 66). In doing so, Merleau-Ponty presented clues regarding the main constituents of a phenomenological description seeking to describe phenomena that involve the problematic notion of consciousness, while also demonstrating the clarity such descriptions are able to provide in discerning complex phenomena that hinder the advancement of scientific progress.

The interview-room analogy thereby seeks to illustrate the course of reflections as carried out in a phenomenological analysis of the findings of this study, explicated throughout this chapter so far. It does so by means of a relatively simple visual analogy, which retains focus on the fundamental phenomenological tenets related to the topic as espoused by Merleau-Ponty, namely, interaction between subject, body, and objects as a grand confluence of objects in the world, with conscious experience as an emerging property, as a phenomenological illustration in the tradition of Adams and Van Manen,

intended to serve as an “evocative example” (2017, 788). The final eidetic description, in response to the first research question, further to the visual interview-room analogy, may hereby be summarised and articulated as follows, and forms a basis for the remainder of the chapter that seeks to address the second research question, and its application or relevance in practice.

Cumulatively, the world, the body, physiological correlates of existing concepts, the biochemical substances responsible for affective feeling states (as spatial objects), and any processes taking place therein (as temporal objects), must form part of the fabric of the universe (whatever its true objective structure), to which intentionality of consciousness (giving experience a primal impression with simultaneous retention and protention qualities) duly interpretively attends, giving rise to consciousness *of* thinking. The thinking process as a temporally experienced object is, more precisely, the process of interaction taking place between spatial objects internally (objects constituting a subject) and externally (objects constituting a subject as well as other objects in the world). On-the-job thinking is hereby denoted as an object, to which the intentionality of consciousness duly attends in the manner originally posited by Husserl, as the constitution of subjective processes via attendance to “real natural objects in the objective spatio-temporal world” (1960, 80), which include on-the-job thinking as a natural object. In the following sections, the relevance and practical applicability of this conceptualisation of the essential nature of on-the-job thinking in the context of OJL is discussed.

5.3 Fostering continuing research and development in on-the-job learning

In this chapter so far, emphasis has been made on the first research question specifically, based on an articulation of the essential nature of on-the-job thinking. At this stage, attention is turned to the second question, which was based on the relevance of such an articulation in practice. Each main aspect of the final eidetic description presented in the previous section, is approached throughout the ensuing narrative with respect to its practical implications in the wider field of research and development in OJL.

5.3.1 Autonomy of on-the-job thinking: Practical implications

Some of the prominent themes emerging throughout the process of articulating the final eidetic description, like the centrality of general and self concepts, or the influence of feelings and feeling states on thoughts and behaviours, were easier to construe as relevant to both the discernment of essence, as well as the prospect of practical application and facilitation of further research and development in OJL. In their post-eidetic analysis status as essential features, they were relatively easily re-applied to incidental contexts. Other, more abstract or philosophical, aspects of the final description, however, such as those related to autonomy, awareness and volition, were initially more elusive and problematic with regard to their implications on professional practice. The autonomous aspect of the experience of thinking, where the thinker is deterministically portrayed less as *causing*, than they are as merely *experiencing* thoughts, at face value appears to undermine the element of control or influence over the process and direction of learning altogether, rendering any debate by educators,

trainers and stakeholders on the matter of promoting and facilitating new learning, seemingly futile. Upon deeper evaluation, however, just the opposite appears to be true.

Marsick et al. portrayed informal learning as integral to work and daily routines, “triggered by internal and external jolts” (2006, 798). Internal and external jolts, and their resulting ‘chain reactions’ of resulting thoughts, concord here with the notion of thinking as internal and external interaction. Change to existing concepts and resulting behaviours, affected through the process of thinking, therefore, must depend on agents presented within such interactions, bestowing more, not less, importance on structured interventions or initiatives designed to enhance OJL. By basing interventions or initiatives on a phenomenological description that emphasises the non-volitional and interaction-based characteristics of learners’ propensity to undergo OJL, *added* importance is in fact placed on the need to facilitate, mediate, or otherwise influence interactions as they unfold continuously on both an internal and external basis, planting, so to speak, the seeds of learning.

If the confluence of objects in the world and existing concepts comprise an influential source of thoughts and behaviours in OJL situations and episodes, then the objects in the world, as well as the existing concepts themselves in which they are reflected, should be tailored towards the development of sound, as opposed to unsound, learning outcomes. Such a tailoring, can only be affected via its presentation within, as integral to, those interactions learners undergo, since the ingredients for learning must originate somewhere. A mirror in this view cannot reflect something that is not placed in front of it. Pulte (2009, 11) made this point in his general critique of language, stating that words are reflections of experience (just as concepts ultimately reflect the world), but

no amount of them could, upon delivery from a sender to a receiver, ever convey the true meanings intended by the sender, if the receiver has never experienced anything similar.

In PFT11's description of empathy, she similarly specified how empathising with someone could only really be achieved by drawing on one's own experiences that are merely similar, and not identical, to that of the other person, and that a real or true understanding or sharing of someone else's feelings can never be complete. Husserl similarly asserted that a subject can never "break out of the circle of their own mental processes" (1970, 16), emphasising how we are limited purely by what those mental processes contain and divulge as reflections of objects in the world. OJL, in this sense, can only result from experiences, of objects, placed in front of the learner. Without interventions as objects presented to the learner, the likelihood of entirely new ways of seeing the world, are less likely to arise exclusively from internal interaction alone, since what is priorly given can only be considered, reorganised or manipulated in a finite number of ways.

According to the interview-room analogy, the moment general concepts are captured by, or impressed upon, the main mirror, they form impressions and become tinting/skewing agents influencing what comes after. Cooper depicted the mind, in this sense, as a builder of symbols where, "external phenomena are meaningless except as the mind perceives them" (1993, 16). Subsequent concepts can only be superimposed upon, or added to, these prior impressions, and the capacity to drastically alter them from the internal perspective alone, which can only consider what is already given, is inherently limited pending exposure to more objects out in the world. So while this

study focuses specifically on thinking, the final eidetic description actively challenges the validity of conceptualising thinking as an isolated and independent process, as alluded to by Greeno (1997, 118), in chapter one in reference to *The Thinker* seated alone on a pedestal at the gates of hell. It does so by emphasising both internal and external interaction, as a confluence. OJL initiatives as objects given to subjects via the process of external interaction (and subsequent internal interaction also), could take various practical forms, and are discussed in more detail in the next section. But first, the apparent autonomy of on-the-job thinking may be considered from an another perspective.

The impasse in further studying OJL, identified in chapter two, was attributed primarily to the tacit learning problem. It has been argued throughout this thesis, that the tacit-ness problem has itself resulted, in turn, from problematic conceptualisations of consciousness, influenced by dual-process theories rooted in cognitive science. A less problematic depiction of thinking, based on descriptions arising from phenomenology, as opposed to models arising from cognitive science, was posited as a prospective means of addressing the impasse, and facilitating a revival of research and development in OJL. Throughout the development of such a phenomenological description, several additional insights came to light, including the identification of the risks associated with hidden, and essentially uncontrollable, learning outcomes arising from OJL, as discussed in chapter two. Based on the claim that OJL occurs predominantly tacitly, with tacit-ness itself attributed to problematic conceptualisations of the notion of consciousness, OJL outcomes are considered to be difficult to measure, let alone direct or control. According to De Lyon and Cushion, hidden learning may lead to uncritical acceptance of potentially ineffective or unsafe practices (2013, 1413).

The argument is hereby made, however, that the notion of *control* over thinking in the context of learning, is not in fact limited to informal contexts like OJL, exclusively, and cannot be used as justification in cautioning stakeholders against it specifically. Eraut (2004) argued that in traditional manifestations of formal (structured) learning, it is in fact the work that is structured (with learning as its intended outcome), and not the learning itself. In other words, whether one is in a classroom or an office, interactions and associated thinking are prompted by tasks, or bouts of *work*. However systematically work tasks are structured, in *both* educational and work-based environments, the learning itself is either an intended or unintended outcome, and can be considered to remain distinctly within the subjective domain of the individual to structure for herself.

So, work, however it is defined, invariably involves interaction on some level, which, according to the final eidetic description, in turn gives rise to the phenomenon of thinking, and such work, according to Eraut (2004), takes place in formal educational environments as well as in workplaces. Learning outcomes arising from *any* form of work, whatever environment it takes place in, and whatever the intentions of those structuring the environment or work tasks are (with learning either as an intended or unintended outcome), it can be argued, are *always* difficult to measure, direct or control.

It was then posited in chapter two, further to the experiments carried out by Di Stefano et al. (2014) on the effects of conscious deliberative reflection, that however much conscious deliberative learning arises during a given task (regardless of whether such a task is based primarily on *thinking* or *doing* according to traditional conceptualisations

of learning from experience), one can never be sure how much unconscious learning is also arising. For as long as learning arising from a problematic conceptualisation of conscious awareness is cautioned against on the grounds of it being tacit, therefore, the validity of discriminating any specific form of learning exclusively, is called into question. OJL has already been found to represent the majority of professional learning following the cessation of formal education and training (Eraut, 2004; Melton et al., 2010; De Lyon and Cushion, 2013), so choosing to discriminate it on the grounds of the risk of questionable tacit learning outcomes, appears, by this reasoning, increasingly counterproductive.

Consider the existence of a potent general concept entrenched in a young vocational college business student that *to make money, one must take risks*. Suppose the content knowledge of a given module or unit on fire safety included knowing the appropriate legislation concerning fire safety equipment, the costs involved in acquiring such equipment, the procedures and implications of regular fire safety checks, and statistics about fire safety conformity. While the learner might be able to achieve all the knowledge-based learning outcomes in a structured assessment by demonstrating her knowledge about all of the above, she could still come away from the overall learning experience, upon weighing up the costs of equipment, penalties, fines and the like, with the opinion that it makes more business sense, in the particular type of business she wishes to operate, to maximise profit, *take a risk*, and avoid certain expensive fire safety measures or equipment altogether. So in other words, while structured assessment of specific learning outcomes might confirm the ability of a learner to express a predefined range of fire-safety content knowledge, one can never be sure what the *actual* learning outcomes are, in this case, knowing enough about fire safety to

select an outcome that would save the most money, while actually sacrificing safety. In the latter case, the *actual* learning outcomes would actively contradict the original scope of the intended learning, and, for that matter, the officially and formally *certified* learning outcomes recorded on her transcript. Consider also the similarly sinister example, of a student exploiting administrative loopholes throughout a course to get away with attending fewer lectures and performing less work than her peers. Despite the learning outcomes indicated on her transcript, such a student might emerge with highly questionable *actual* learning outcomes about how she believes one might “get ahead” in the “real world”. In other words, the essentially illusory nature of *control* over actual learning outcomes extends to all forms of learning, and does not represent a sound justification for the cautionary approach taken by researchers, educators and trainers, to OJL exclusively. As a consequence, it is argued throughout the following sections, that, the aim of stakeholders intent on promoting and facilitating OJL, or any other form of learning for that matter, should be focused not on learning outcomes per sé, but on the propensity for learners to engage in, from their subjective viewpoint, thinking that is conducive with the development and organisation of sound general concepts that lead, in turn, to sound learning outcomes.

Regarding the autonomous, non-volitional aspects of the final eidetic description of on-the-job thinking, therefore, two main observations are hereby made. First, that OJL initiatives and interventions, whatever form they actually take in practice, are crucial in influencing the formation of general and self-concepts in learners, as objects presented via external interaction to thinking subjects. And second, that such initiatives be focused primarily on the formation of general concepts most likely (as tinting/skewing agents), to lead to the formation of desirable learning outcomes, rather than exclusively

on attainment of predefined objective learning outcomes, which may in fact be promoting counter-productive or otherwise indeterminate actual learning outcomes.

5.3.2 Thinking as external interaction: Practical considerations

Beard and Wilson defined theories of experiential learning as, “abstract conceptualisations of how *thoughts* and *external objects* relate to one another in a consistent manner” (2015, 27). In the previous section, in view of the centrality of the relationship between thinking and external objects in experiential learning contexts, it was argued, that what is given to a thinking subject via external interaction (and also attended to by subsequent *internal* interaction) is crucial to on-going learning, substantiating the importance of structured interventions in guiding OJL. Such initiatives, construed as objects given to subjects via the process of external interaction, could take various practical forms. Use of the terms *interventions* and/or *initiatives* throughout the remainder of this chapter, therefore, connotes various possible configurations, not necessarily limited to those already well-documented in research on WBL and PBL, like work placements, apprenticeships, and communities of practice. An intervention as an object presented through external interaction could simply comprise information on the nature of OJL, and/or various practical methods for its enhancement, internalised by the subject, retained, and used throughout the series of OJL situations and episodes constituting the overall career span, without additional guidance or reinforcement. In this view, knowledge about OJL would represent the kernel of fruitful learning experiences and outcomes, so long as on-going individual commitment and self-motivation to learn exists.

In workplaces, where the emphasis is naturally focused primarily on actual work, rather than on learning, the need to balance the two has been considered a persistent barrier to workplace learning (Jedaar et al., 2009, 478). The onus is thereby placed on the individual, who is ultimately expected to deliver, without the need for continuing organisational initiatives aimed at learning and development (Raelin, 1997). According to Marsick et al., employees are increasingly expected to be “self-directed in their learning”, to keep up with an ever-evolving “knowledge economy”, itself magnified by “performance pressures” (2006, 794). Information, in this case, may be presented by formal institutions or organisations in the form of courses, units or modules in any way related to OJL, be they educational or work-based, or obtained from other sources associated more with informal learning channels, like publications, seminars, or various online resources.

In the absence of practical organisational constraints, on the other hand, interventions could, indeed, also assume more on-going and structured forms, designed to guide and facilitate learning, that are less dependent on individual commitment or self-motivation to learn. Such on-going interventions could be offered by a range of organisations committed to the enhancement of OJL, including both education or work-based entities. Constructivist learning, in this sense, is characterised by personal discovery and problem-solving, taking place in a “responsive environment” (Cooper, 1993, 16). Instead of considering its predominantly problematic nature, as indeed it is portrayed in the sector-specific literature, OJL may therefore instead be re-conceptualised by educators and trainers, as, for instance, a problem-solving and hands-on *constructivist* learning environment, where they play a valued role in the implementation of structured initiatives and interventions. According to Jedaar et al., “teachers and facilitators” are

sometimes needed in work-based contexts to assist learners in recognising opportunities and making the most of their resources (2009, 478), or providing “observable models” of tacit skills for learners to “follow and imitate” (Raelin, 1997, 564). Raelin continued to posit that “helpers” can be “critical” in encouraging professionals to try out new workplace behaviours (1997, 575). The implications of the findings of this study are discussed, therefore, throughout the rest of this chapter, in the scope of *external interaction*, with a view to integration within any such singular or persisting variations of structured interventions or initiatives, including those that are individually-sought or organisationally-sponsored.

5.3.3 General and self concepts: Practical implications

Further to Eraut's (2004) assertion that workplaces are rarely structured with learning in mind, if sound learning is based on the formation of sound reflections of objects in the world, then all objects in the world would need to be restructured with learning in mind, with a view to their sound representation as concepts. The difficulties of restructuring every aspect of a learners *external* environment, however, lend further credence to the importance of the *internal* aspects of thinking, and sound concept formation as a sound reflection of an otherwise unsound outside world. While the significant restructuring of work environments might indeed promote increasingly sound learning, the impracticality of such a colossal enterprise is palpable. *Sound* reflections of *unsound* objects in the world meanwhile, are only possible, bearing in mind the interview-room analogy, through the existence of concepts that have the capacity to mediate internal interaction (proceeding seamlessly from external interaction), in such a way that is conducive with the formation of sound learning outcomes. If on-the-job thinking and learning is dependent on existing general and self concepts as tinting/skewing agents,

then their enhancement with a view to sound OJL outcomes represents a compelling, and, perhaps more practical and realistic enterprise than physically and organisationally restructuring work environments for learning.

With a view to enhancing the formation of sound concepts, the impetus noted in the literature towards the development of thinking/reflecting models and tools appears to find justification here. Application of the scientific method to individual thinking, as originally espoused by Dewey (1910), would, hypothetically, represent progress in the form of sound learning outcomes, in much the same way as sound scientific theories represent scientific progress for societies on a collective scale. While this point appears to support the use of systematic measures based on the formation of sound general concepts through the development of scientific (Dewey, 1910), critical (Moon, 2008) or reflective (Borton, 1970; Gibbs, 1988; Schön, 1991; Raelin, 1996) thinking as a skill via the use of models and tools, they do not necessarily support the general impetus noted in the literature towards the development of additional, or augmentation of existing, thinking/reflecting models and tools.

As argued in chapter two, existing models and tools designed to guide thinking and learning, lack conclusive evidence ascertaining their efficacy and usefulness in practice (Staniforth and Harland, 2006; Noormohammadi, 2014), and were criticised on the grounds that they reside on tenuous theoretical foundations pending the articulation of more robust definitions of the thinking acts they seek to operationalise and enhance. Marsick et al. stressed the importance that future research be based instead on finding out precisely what *works* in enhancing work-based learning (2006, 799), creating a

heightened sense of urgency with regard to *validation* as opposed to *proliferation* of theoretical constructs designed to enhance OJL.

The development of additional models and tools, or their augmentation with additional layers of abstraction or complexity, would only compound further research efforts aimed at their validation. A more practical contribution towards maximising the apparent benefits thinking models and tools may have in enhancing the formation of general concepts conducive with sound learning outcomes, by this, as well as other prospective studies, is therefore instead considered to be based primarily on a *clarification* and *distillation* of existing work. Brown highlighted the danger of learners being able to “acquire” tools, yet remain unable to actually use them effectively. Knowing yet not being able to use a tool, effectively renders it “decontextualised” (1988, 10), highlighting an important limitation of such tools in the context of OJL, since OJL in itself is typically, by its very nature, *practical* and *contextualised*. A tool that is *theoretical* and *generic*, in this respect, appears increasingly and inherently incompatible with the fundamental nature of OJL. Thinking and reflecting models and tools are discussed, therefore, throughout the following sections, in consideration of the final eidetic description and its main features, with the aim of clarification, distillation, and eventual modification, as opposed to proliferation or augmentation.

Throughout this thesis, it has been argued that for a science to be truly complete, the systematic study of subjectivity, as advocated by the methods of phenomenology, should underpin the study of objectivity, as advocated by the methods of positive or natural science. An initial consideration, therefore, with regard to the distillation of thinking/reflecting tools, is that efforts designed to enhance scientific processes at the

level of an individual learner's thinking (as originally intended by Schön), should reflect this wider scientific scope. In other words, an attitude based on epoché may similarly be cultivated by learners. Scientific thinking, by this definition, would include a consideration of alternative possibilities based on the suspension of the objectified outcomes of traditional scientific/critical thinking. A sensitivity to description and clarification in addition to explanation, prediction, and correlation, may enhance the quality of OJL outcomes, supporting the representation of qualitative phenomenological thinking in traditional thinking/reflecting models and tools. On the collective scale, sound scientific methods lead to the formation of sound theories, which themselves result in sound descriptions (in the sense of phenomenology and a *complete* science), explanations and predictions about personal, social, and natural phenomena in the world. On an individual level, the result of sound scientific thinking would be concepts that are akin to sound theories, as opposed to "naive" theories based on "incomplete thinking" (Baron, 2008, 17).

In this regard, the notion of *threshold concepts* assumes particular relevance in any effort to emphasise the formation of sound learning outcomes as a desirable capability of on-the-job thinking, which, as argued previously (in section 5.3.1), are preferable to emphasising the achievement of specific objective learning outcomes alone. Meyer and Land define threshold concepts as those concepts that result in a "seeing (of) things in a new way". Comprehending a threshold concept shapes a "transformed internal view" of objects in the world, and a change in how subjects "perceive, apprehend, or experience particular phenomena" (2003, 1). Further to the analogous reflective surface of a mirror as a tinting/skewing agent representative of existing general and self concepts, the definition of threshold concepts, in their capacity to alter thoughts just as the textured

surface of a mirror alters the image it portrays, reinforces their significance with respect to the final eidetic description of on-the-job thinking, and thereby warrant further discussion here.

Meyer and Land present the notions of *complex numbers* in mathematics, or *opportunity cost* in economics, as examples of threshold concepts, because they represent a change in the way individuals perceive problems in those subjects, and perhaps even wider problems outside the immediate scope of those subjects. Indeed, certain threshold concepts may change an individual's entire world view. In a further example by Meyers and Land (2003, 4), Newton's universal laws of gravity are accepted as theory on a collective scientific scale, but to the individual, in their propensity to transform one's understanding about the motion of objects that sometimes contradict everyday intuitive, yet mistaken, assumptions (that heavier objects, for instance, fall faster than light objects, or that objects will eventually slow down without the need for external forces to act upon them), essentially establishes the theory of gravity, as a threshold concept. Upon grasping it, one can view previously intuitive (yet mistaken) assumptions (like those outlined above), in an entirely different way. Thinking/reflecting models and tools, therefore, and indeed OJL initiatives and interventions at large, can be conceptualised as means of enhancing thinking not so much as a sound theory-building activity, but rather, for want of a more relevant term, as an activity that results in the formation of sound *threshold* concepts.

Apart from being *transformative* in their capacity to change one's view, and *integrative* in their capacity to span contexts beyond those in which they were acquired, threshold concepts will often also be, according to Meyers and Land (2003, 4-5), *irreversible*. In

other words, once the viewpoint has been changed, it is difficult, or even strange, to attempt to see the world in the same way as one did prior to their comprehension, such as, following comprehension of Newton's laws of gravity, that objects of different mass fall to the ground at the same speed, or that in the absence of gravity and air resistance, an object would continue to travel at the same speed through space indefinitely, unless some external force eventually acts upon it. This precise notion, of an altered view of the world, corroborates the particular feature of the final eidetic description that portrays thinking as wholly dependent on the tinting/skewing, interpretive and reflective (of objects in the world) veil, represented in the final analogy as the textured surface of the main mirror. Thoughts, in this sense, were defined as being what they are, without the possibility of being anything else, subject to physical changes to the reflective surface, analogous to a repository of existing concepts, incorporating, according to Meyers and Land (2003), threshold concepts, and *core* concepts (concepts that compliment threshold concepts but in themselves do not represent a transformed view of the world).

In his explanation of thinking from a mathematical perspective, Schoefeld (2012, 231-232) similarly conceptualised various factors influencing typical problem-solving processes in teachers, including *knowledge* and *beliefs*, akin to *core* concepts, as well as *problem-solving strategies*, also known as “heuristics” (Pólya, 1945, cited in Schoefeld, 2012, 231), which were akin to threshold concepts in their capacity to change perception and apprehension. Effective use of thinking strategies (or *threshold concepts*), requires learners to be aware of their own thoughts, enabled by concepts setting themselves up in a pure seeing (metacognition). Cromley (2000, 48) and Kretchmar (2013) both emphasised the importance metacognitive ability as a means of

enhancing learning, and an important skill to be encouraged and nurtured in learners. By setting up thinking as its own object, thinking strategies may be duly monitored by thinking subjects throughout their application. In the absence of effectively applied “heuristic” thinking strategies, Baron warns against an increasingly likely susceptibility to a range of cognitive biases (2008, 152), and an associated risk of forming “naive theories”, resulting from “incomplete thinking” (2008, 17), resonant with the discourse on undesirable learning outcomes.

The notion of core and threshold concepts permit added clarification of the nature of what have, until now, been referred to in this thesis simply as, existing *general* concepts. Among the most influential of existing general concepts to the thoughts and behaviours of PFTs, according to the participants themselves, were those pertaining to self. Discussion of self-concepts in the literature affirms their influence particularly on the *motivation* of adults to learn (Rogers, 1961; Knowles, 1984). Indeed, motivation and self-direction feature as prominent themes in the wider field of research on *adult learning* (Chinnasamy, 2013). According to the prevailing discourse, by incorporating self-direction into one’s self-concept, an adult will typically assume an approach to learning that differs from that of a child. The findings in this study, meanwhile, support a continuing discourse on self-concepts limited not only with regard to their influence on motivation to learn among adults, but inclusive rather, of their more intrinsic, central and affective nature in practical OJL situations and episodes, as influential blueprints or guides to thoughts and behaviours. In this regard, the emphasis on self-concepts noted in the accounts of PFTs, justifies the prospective development of dedicated initiatives towards their enhancement, with a view to maximising desirable learning outcomes. Any discussion on the enhancement of existing general concepts with a view to

maximising learning, therefore, stands to benefit from further consideration of, not only threshold concepts or heuristic thinking strategies, but also, self-concepts.

PFTs described concepts of self that could have been based on any number of assumptions, positively or negatively conceptualised prior events, or otherwise irrational influences, and also expressed an element of choice or empowerment with respect to adopting and modifying them. PFT12 discussed the notion of every person having access to two versions of themselves, like internal “echoes”, from which they must choose, in their determination of success or cowardice. PFT08 similarly described his efforts to be more of an extrovert, as opposed to his prior conceptualisation of himself as an introvert. PFTs also cited self-concepts to which they did *not* aspire, such as the “sergeant” type (PFT04) of trainer, or the type of extrovert that exposes too much private information (PFT08).

In terms of thinking/reflective models and tools, therefore, professionals may benefit from exercises, in the wider scope of general OJL interventions, aimed explicitly at the construction or enhancement of positive, fruitful, and valid *self*-concepts conducive with learning, development, and the attainment of personal and professional goals. How PFTs saw themselves, how they would have liked, or not liked, to see themselves, the role-models they cited, and the expectations they considered as integral to their role, all represented facets of their self-concepts amenable to prospective re-conceptualisation in structured interventions.

In summary, it has been posited in this section, that efforts to modify or distill thinking/reflective models and tools, or indeed OJL initiatives on a wider scale, should, first,

incorporate methodology conducive with a complete conceptualisation of science, and second, include a special focus on the formation of sound *core*, *threshold*, and *self* concepts, in their capacity to constitute agents of positive change in on-the-job thinking, and any resulting learning outcomes.

5.3.4 Self-talk: Practical implications

In positing language-use as a form of thinking, Vygotsky (1987) affirms the importance of self-talk in the context of on-the-job thinking. Further to the need for distilling existing thinking/reflecting models and tools, given their nature as typically based in language-use, the notion of self-talk assumes added significance. In chapter two, reflection models as espoused by Borton (1970) and Gibbs (1988), were discussed in their capacity to guide reflective thought through deliberative bouts of self-talk based on scripted questions. PFTs' accounts of bouts of self-talk (or *inner speech*), however, duly challenge the applicability of current configurations of reflection models in practice.

Rather than a structured practice to be carried out in a scheduled and deliberative fashion, inner speech was portrayed by PFTs as a much more fluid, continuous, and unplanned phenomenon. PFTs depicted their bouts of reflective self-talk less as deliberately initiated, and more as continuations or extensions of various situations and episodes, as resulting from external interaction with others or the environment itself. PFT08 and PFT11 both explicitly stated that they never “sit down” and tell themselves to think or reflect, describing their reflections as occurring “naturally”. While some PFTs described use of self-questions which were apparently quite structured, the nature of their occurrence was primarily either spontaneous, or unfolding

directly from prior events. PFT04 described a particularly self-critical reflective episode based on self-talk, which was not initiated deliberately, but rather triggered by, and proceeded immediately upon, reading an email from a client. PFT10 similarly described how her reflective bouts of self-talk would occur while driving from one session to the next, continuing seamlessly from the session itself, spurred on by feelings of “awkwardness” when things did not go according to plan. PFT05 described how his reflective bouts of self-talk would result from attempts at trying to “make sense” of the things that “played” on his mind.

Carruthers stated that, “the movement from awareness of one’s own inner speech to the propositional attitudes thereby manifested, is just as interpretive as is listening to the speech of another person” (2017, 232), emphasising the spontaneous and non-volitional aspects of its nature as a phenomenon. While knowing a carefully designed or scripted repertoire of self-questions would appear to be a worthy pursuit, since their extraction in practical contexts would be akin, according to Carruthers, to listening to the speech of another person, reflective practice as a structured system to be maintained throughout a professionals’ career span, in a scheduled and deliberative fashion, did not concord with PFTs’ accounts.

PFTs’ accounts of their experiences of self-talk, suggests that the distillation of language-based thinking/reflecting models and tools designed to enhance the formation of more sound core, threshold, and self concepts, take into account the fluid nature of inner speech, and prospective application in a more opportunistic fashion. In other words, according to the participants, scripted questions were more likely to emerge naturally during uninitiated bouts of self-talk, without the need for deliberative,

structured, and scheduled reflection sessions. Further to Carruthers' (2017, 232) assertion that awareness of inner speech resembles one's awareness of the speech of another person, then provided memorised self-questions are rooted in existing general (core) concepts, their emergence during OJL episodes and situations constitutes an experience to be, as described by Rogers in his discussion on self-concepts specifically, “confidently felt in process” (1961, 153), and not an isolated, separated, abstracted, or even deliberately-initiated process.

Further to Vygotsky's notion that thoughts are, “*completed* in the word” (1987, 252), language-based reflection models are uniquely poised to make valid contributions to the reconsolidation of existing general concepts, adding credence to the aim of enhancing their applicability in practice. Like all forms of interaction, as argued previously (in section 5.3.1), scripted reflective self-questions as a basis for ensuing bouts of self-talk, represent useful encoded “objects” for presentation in such interactions, be they internal or external. Carruthers cited additional research in neuroscience, suggesting that motor instructions in inner, as well as verbalised, speech, are created in the same way, issuing a “forward model” of sensory consequences for a given speech act, where outgoing signals to the muscles involved in verbalised speech are suppressed in the case of inner speech (2017, 232), highlighting language as a common demoninator among various ways of reconsolidating general concepts (thinking). Vygotsky (1987) presented a continuum of language use, including inner, verbalised, as well as “written” speech, showing how practices based on the self-directed, spoken, as well as written word, like self-talk, interviews or focus group discussions, and journal writing or written communication with others such as those encouraged in “communities of practice” in WBL contexts (Raelin, 1996; Jedaar et al., 2009), all represent worthy components of

prospective OJL interventions that facilitate a reconsolidation of existing concepts through language by *any* means. Raelin further posited that learners may find it difficult to engage in fruitful reflection without the assistance of a partner or mentor (1997, 575), emphasising the importance of enlisting others with whom to communicate, as a valuable means of enhancing OJL.

It has been argued in this section, therefore, that while self-talk constitutes a valuable form of thinking in the context of OJL, and a prospective means of implementing processes designed to enhance formation of more sound core, threshold and self concepts, its use should take into account the more spontaneous or fluid nature of self-talk as it actually occurs in practical contexts according to the participants in this study, and that engagement in regular, scheduled, and deliberative bouts of self-talk throughout the career span, as implied by traditional thinking/reflecting models and tools, may be an unrealistic goal. Furthermore, in its capacity to enhance on-the-job thinking and associated learning outcomes, language-based thinking need not be limited to spoken (to self or other) form alone, lending credence to prospective initiatives based also on the written word.

5.3.5 Feelings and feeling states: Practical implications

Further to the centrality of existing general concepts in the final eidetic description, similarly influential to the thoughts and behaviours of PFTs, were feelings and feeling states. Like general concepts, which have already been deemed worthy of interventions aimed at their enhancement in terms of their influence on sound or unsound learning outcomes, affective feelings during OJL situations and episodes were similarly prominent in PFTs' accounts of their on-the-job thinking. Such feelings and feeling

states, however, may have been unjustified, irrational, or otherwise incompatible with the development of sound learning outcomes, particularly when they were of a negative nature. Jedaar et al. noted that mental anxiety, for instance, can have a “major negative impact on learning performance in the workplace” (2009, 478).

Just as PFTs showed evidence of a sense of empowerment to select or modify aspects of their self-concepts, strategies for managing negative feelings were also noted in their accounts. PFT05 described his clear use of visualisation techniques to manage negative feelings, by likening his anxiety to a rainstorm. Instead of running outside and waving his umbrella around, he explained how he would strive to remain calm, and simply wait for the rain to pass, without getting wet. PFT10 described how she managed negative feelings experienced prior to the delivery of a fitness class by writing down her session plan and listening to music, to align her focus on the task at hand. The existence and efficacy of established strategies for managing negative feelings, very much like those used in psychotherapy, therefore, were already, to some extent, apparent to the PFTs. In their discussion on whole-person learning theory, Marsick et al. recognised the importance of, “integrating feelings and emotions into the cognitive design of the informal/incidental learning framework” (2006, 797), showing that strategies for managing feelings and feeling states, like those used in psychotherapeutic contexts, have an important prospective role to play in initiatives or interventions designed to enhance OJL.

Initiatives aimed at enhancing the formation of sound self-concepts, as well as those aimed at managing feelings and feeling states, are further portrayed by Rogers (1961) as mutually beneficial, via his assertion that congruence with one’s self-concepts is

crucial to the nature of feelings and emotional states experienced by subjects. PFTs' descriptions support Roger's observation concerning congruence, or incongruence, with existing self-concepts as determinate to resulting feelings, in turn influencing the outcomes of episodes and situations, and the learning that results. PFT03 explicitly described how a particular situation had put him in a position which "jeopardised" his "image in the fitness centre". His feelings in this regard resonate with the notion of *defense mechanisms* famously popularised by Sigmund Freud (1856-1939), and further developed by Anna Freud (1895-1982) (Freud, 1936), broadly defined by Prunas et al. as, "unconscious mental processes that aim to protect an individual from conflicting ideas and intolerable affects" (2017, 1). Approaches in psychotherapy have been broadly categorised as behaviourist, cognitive, or psychoanalytic (Parker, 1999, 2). While the works of Sigmund Freud are associated with the latter approach, some more recent variations on behavioural and cognitive approaches, or even a combination of the two, like cognitive behavioural therapy (CBT), may constitute valuable tailored components of structured OJL interventions.

CBT, for instance, posits thoughts, behaviours, emotions and physiology as interrelating parts of a unified system. Curwen et al. presented the example of a TV exploding, where *physiological changes* via a surge of adrenaline in a subject would cause a rapid change in *behaviour*, from, say, sitting down in a relaxed fashion, to surging for a fire blanket. This may be accompanied by *feelings* of anxiety and *thoughts* pertaining to possible outcomes or courses of event that might follow (2000, 18). According to Curwen et al., these changes are not typically brought about by the situation itself, but rather, by our reaction to it. CBT represents a systematic approach to overcoming some of the difficulties associated with such reactions, by considering

the underlying structures giving rise to them (2000, 20). Liou also presents a deeper compatibility between psychotherapeutic approaches and OJL situations and episodes, by highlighting the similarities between psychotherapy and “carefully-designed service-learning activities” in promoting personal growth and change, emphasising the therapeutic value of actual work. According to Liou, both activities “help people become aware and get in touch with their emotional experiences” (2018, 84). In view of the affective influence of feelings and feeling states on the formation of learning outcomes following OJL situations and episodes, therefore, their management via the use of methods and techniques adapted from psychotherapy, may prove a worthy component of initiatives and interventions in the OJL context.

Throughout this chapter, the implications of abstract philosophical features of the final eidetic description, like awareness and volition, were discussed with a view to ascertaining their relevance in real-world OJL contexts. Additional more practical factors, including the centrality of general concepts and their various qualities, such as those rendering them essentially core, threshold or self-concepts, as well as the nature of self-talk as described by PFTs, and the affective influence of feelings and feeling states, were presented as prospective aspects of structured OJL interventions and initiatives. In the next chapter, elements of this discussion are parlayed into a more succinct set of points and questions, designed to address the second research question in particular, which was aimed at the promotion and facilitation of a revival of research and development in OJL. It should be stressed at this juncture, that, notwithstanding the discussion presented throughout the second part of this chapter, it is the final eidetic description itself, that is to be considered the main contribution by this study towards on-going research and development in OJL, because it is, in itself, intended as a

fundamental constituent of the theoretical foundations upon which academic inquiry in the field rests. In other words, as argued in the first part of this chapter, it is intended to provide an alternative view in the interpretation of research data on phenomena in any way related to on-the-job thinking and/or the wider field of OJL. This point is elaborated in the following chapter, and similarly parlayed into a coherent set of questions and prompts for future research.

Chapter six: Conclusion

6.1 Preamble

In this sixth and final chapter, a final recapitulation of the main arguments comprising the thesis are presented, followed by a critical and reflective evaluation of how they actually address the two main research questions. The ensuing evaluation considers the work both in terms of content, and method.

The final recapitulation summarises the thesis, and elaborates on various key features of it. The analogy used to clarify the final eidetic description of the phenomenon of on-the-job thinking, is also finally illustrated visually. The critique on content is based on an evaluation of the implications of the findings, grounded in the original context in which the study was conceived, by referring back to some of the early problems identified in chapters one and two. The aim here, is, following the deep reflective tone developed throughout chapter five, to bring the original main aims of the thesis back into focus, and draw a final conclusion to the work.

The critique on method is centred around the themes of generalisability, methodological coherence, and language-use, followed by various other incidental concerns. The discussion on method is, first, intended to clearly frame the scope of the findings, and second, to entertain the prospect of repeating the study in the future, using an improved research design. This chapter, and indeed, the entire thesis, is finally concluded with a series of twenty questions, intended as prompts towards a revival of research and development in OJL.

6.2 Final recapitulation

In chapter one, the development of initial and relatively indistinct interests into a more coherent research topic, was described. Reflections on the nature of accrual of knowledge and abilities resulting from experience, made in the context of work in the health and fitness sector, permitted the start of a review of literature, initially focused on the acquisition of knowledge and skills by fitness professionals.

6.2.1 Existing knowledge of on-the-job thinking in the context of OJL

Early readings around the topic, based on the sector-specific literature, were encouraging, since they substantiated OJL as a worthy research focus. *Informal* learning was cited as the main source of relevant and applicable knowledge for fitness professionals, while existing *formal* learning mechanisms were deemed insufficient for “real world” contexts (De Lyon and Cushion, 2013). In the words of fitness professionals and managers themselves, OJL was considered to be the “most important way” to learn, following the cessation of formal education and training (Melton et al., 2010; De Lyon and Cushion, 2013). Despite its apparent importance and initial promise as a revelatory topic, however, further research into the phenomenon had been evidently impeded by a lack of universally agreed learning outcomes against which its validity could be measured, and more pertinently, by the general tendency for OJL to occur predominantly tacitly and unpredictably (Eraut, 2004; De Lyon and Cushion, 2013). A gap in the literature was thereby noted, engendering the need for the sourcing of additional bodies of literature outside the immediate scope of the health and fitness sector, to discern the essential nature of OJL in any greater detail.

Di Stefano et al. (2014), meanwhile posited reflection (a form of thinking), as a means of enhancing OJL, through its propensity to increase conscious explicit learning. While conscious learning was shown to be increased using a simple form of reflection, any corresponding effects on unconscious implicit learning, remained indeterminate. Indeed, a reasonable assumption was made, since implicit learning tends to constitute the majority of learning in OJL contexts (De Lyon and Cushion, 2013), that an increase in explicit (conscious) learning, as an activity in its own right, might very well also lead to accompanying increases in the former, leaving the tacit-ness problem essentially unresolved. Di Stefano et al. (2014) did, nevertheless, serve to elevate the status of thinking with respect to its value as an essential component of the wider phenomenon of OJL, as did Kolb (1984), in his juxtaposition of thinking and doing in the KELT cycle, essentially apportioning equal value to simply thinking about an episode, and actually being engaged in it. Despite its apparent reliance on thinking-based processes, however, the KELT cycle did not offer suitably robust definitions of such processes, or indeed any further insight about their essential nature. In search of more robust definitions for the thinking-based terms used in KELT, its theoretical underpinnings were more closely reviewed in a second body of appropriated literature, which was based on fundamental theories of learning and education.

One of Kolb's three nominated proponents, Dewey (1910), alluded to the fleeting nature of thinking, and proceeded to establish a persistent trend in later scholarly works, by operationalising thinking into procedural outcome-based models and tools, designed to enhance the efficacy and usefulness of thinking in terms of what it should be, rather than what it actually is. It was argued in the latter parts of chapter two, that procedural

models and tools designed to operationalise and enhance thinking and learning as abstracted and isolated processes, were insufficient for exploring the actual essential nature of the thinking acts they described, based on their tendency to aggregate acts of thinking into terms based on their assumed prospective usefulness, rather than on a rigorous understanding of their essential nature.

The knowledge gap resulting from the hindrances preventing further study of OJL, and its inherent thinking aspects (on the grounds of its tacit-ness), as well as the observations made by Eraut (2004), that on-the-job *thinking in action* is riddled with significant yet unacknowledged complexity, steered the research focus, at this juncture, towards a third body of literature based predominantly on cognitive science. Here, the problematic nature of tacit thinking was eventually reduced, more specifically, to the poorly understood nature and role of consciousness itself. Dual processing theories (Evans and Stanovich, 2013), in particular, were identified as a central theoretical foundation influencing education and learning theories, and hence a primary source of their problematic conceptualisation of learning in the relatively simplistic terms of it being either conscious, or unconscious. The phenomenon of tacit learning could, in fact, be traced directly to theoretical underpinnings rooted in the dual-process theoretical depiction of *type-one* thinking, as tacit or unconscious.

Following a deeper review of cognitive science literature, holistic non-fragmented approaches were found to more suitably promote a better understanding of thinking in practical contexts (Osman, 2004; Carruthers, 2014), together with the conceptualisation of consciousness as a graded property (Osman, 2004; Baars and Franklin, 2007), rather

than one that is simply absent or present. From a perspective rooted in continuing professional development in the field of nursing, Ekebergh (2007) raised the important argument that thinking should not be understood objectively as a cognitive or intellectual activity at all, but instead, subjectively, as an experienced phenomenon, affirming the initial intentions of Kolb to conceptualise learning (and its inherent thinking-based aspects), as a human experience with a distinctly personal and subjective nature (Kolb et al., 1999, 2).

6.2.2 Towards a re-conceptualisation of on-the-job thinking

These insights rendered the subjective phenomenological approach, a propitious means of elucidating the essential nature of on-the-job thinking, thereby establishing a promising philosophical and methodological position for the developing thesis. A fourth and final body of literature dedicated to phenomenology, philosophy of mind, and consciousness was discussed in the final part of chapter two, and further elaborated from a philosophical and methodological perspective later in chapter three. The phenomenological approach appeared to deter reliance on dichotomies, and the profusion of ambiguous terminology. Following the review of four bodies of literature, a set of two research questions was articulated, namely;

- 1) According to the subjective experience of PFTs, what is the essential nature of thinking in the context of on-the-job learning?
- 2) How might conceptualisations of thinking as a subjective experience contribute to the advancement of research and development in OJL?

To address these questions, a five-step research method was developed following a thorough review of phenomenology in chapter three, which included its classical, as well as more modern, methodological expressions. As argued in the review of literature, traditional conceptualisations of the nature or essence of cognition appear to have fallen victim to the types of “obscurities” Husserl professed as the inevitable consequences of objective science (1960, 4). Husserl’s phenomenology was, therefore, considered uniquely poised to address the main research aims of the study, in its dedication towards a, “seeing, clarifying, and distinguishing (of) meanings” (1973, 46). Some of the fundamental principles of phenomenology were duly disseminated in chapter three, including its central orientation towards the exploration of *intentionality* as opposed to *causality* (Englander, 2016, 4), defined as the act of *relating to* an object as existent, even if the object itself is not. The suspension of judgements about the world as existent, in the way implied by traditional objective science, was presented as the fundamental concept of *epoché* (the phenomenological attitude), permitting a *reduction* to the pure essence of inter-subjectively communalised phenomenal experiences in the world, that make themselves “objectively actual” (Husserl, 1960, 107).

More modern applications of phenomenology were further reviewed with respect to two prevailing schools of thought, namely the descriptive or “transcendental” approach (Giorgi et al., 2017), attributed to the methods developed and employed by Edmund Husserl, and the interpretive or “hermeneutic” approach (Smith and Osborn, 2008), attributed to the later work of Martin Heidegger. The argument was raised in chapter three, crucial as an assumption underlying the main methodological character of the study, that both Husserl and Heidegger acknowledged an interpretive or *constructive*

element to phenomenological methodology. Husserl argued, that the “secure objectivity science demands, can only be attained by *constructing* basic *judgements* of essence” (1973, 55), a methodological observation corroborating Heidegger’s (1982, 21) notion of *constructed* narrative. Since “assumptions drive methodological decisions” (Lopez and Willis, 2004, 726), and in accordance with Englander’s recommendation that phenomenological researchers build their methodology on “solid philosophical grounds” (2016, 2), a final research method was presented, based on the main philosophical assumptions and principles discussed throughout chapter three. Drawing on the ideas, methods, and tools of classical Husserlian and Heideggerian phenomenology, modern descriptive and interpretive phenomenological techniques, and a qualitative interpretation of a synthesised universal scientific method, the five-step research method was presented as follows;

- 1) *Experiencing* via collection of data
 - Interviewing and transcribing
- 2) *Organising* via phenomenological reduction
 - Reading, rereading, reflecting, and annotating
- 3) *Explicating* via construction of an initial eidetic description
 - Expressing themes, clustering, and articulating superordinate themes
- 4) *Validating* via destruction/eidetic analysis
 - De-constructing main concepts, and differentiating incidental and essential features
- 5) *Generalising* via the final eidetic description
 - Revealing the pure essence of the phenomenon

6.2.3 Addressing the main research questions

A thorough description of activities carried out at steps two and three of the five-step method were explicated in chapter four. In accordance with an on-going commitment to rigour, a detailed and transparent exposition of the emergence of interpreted annotations, themes, superordinate themes, and final main themes was presented, culminating in an initial eidetic description of the phenomenon of on-the-job thinking, based on four final main themes. At this stage, the temptation to articulate a final description based solely on an inter-subjective composite narrative of participants' accounts, reflected by the main final themes, was restrained, in favour of continuing phenomenological reduction and eidetic analysis (step four). This crucial phase marked a transition from the application of analysis to collected data (in the modern phenomenological style), to analysis of a fundamental problem of a more conceptual nature (in the classical phenomenological style), as constituted by the main final themes and resulting initial eidetic description.

Steps four and five of the five-step method were subsequently explicated in depth in chapter five. The de-construction of the main themes was presented in a manner that clearly shows how continuing phenomenological reduction and eidetic analysis were applied by the researcher, chartering a series of intensive philosophical reflections. In what essentially constituted a largely philosophical enterprise, the thinking of the researcher was laid bare at this stage, exposing a progression of “contestable” (Aagard, 2017, 524) ideas, on the grounds that their basis in, and emergence from, the original data is transparently explicated throughout the previous chapters. To provide context and background to the basis, and outcomes, of the reflections carried out, the personal

position and reflexivity of the researcher was also discussed in some detail in chapter three.

6.2.4 The essential nature of on-the-job thinking

Cumulatively, the world, the body, physiological correlates of existing concepts, the biochemical substances responsible for affective feeling states, and any processes taking place therein (as temporal rather spatial objects), were conceptualised as forming part of the fabric of the universe (whatever its true objective structure), to which the intentionality of consciousness (giving experience a primal impression with simultaneous retention and pro-tention qualities), duly interpretively attends, giving rise to consciousness *of* thinking. It was not considered necessary, or *essential*, for the thinking process as a temporally experienced object to be abstracted or conceptually delineated from the process of interaction itself. In this sense, thinking was described as inseparable from, or essentially, the same thing as, processes of interaction. More specifically, the experience of thinking is, in fact, according to the final eidetic description, the experience of interaction itself, taking place between spatially defined objects in the world, that are both internal and external to the subject. The confluence of such *spatially*-defined objects, cumulatively constitutes a unity that tangentially manifests in turn as a *temporally*-defined object, experienced familiarly as a “frame by frame” (Stannard, 2010, 93), “stream of consciousness” (James, 2017, 165). The possibility of confluence between spatially and temporally defined objects as a unity, is resonant with current difficulties in objective science, to understand the structure of a universe in which space and time, despite their palpable manifestation as distinctive and separate, yet interrelated, qualities of human experience, are conceptualised as a unified fabric (Landyman, 2007, 325).

The interpretive attendance of the intentionality of consciousness to on-the-job thinking as an object in the world, helped shed light on the paradox articulated by Eraut, whereby professionals are able to, “refer to codified scientific knowledge in clear explicit terms, yet use that knowledge in ways that are largely tacit” (2004, 256). The *articulation* or *use* of knowledge (or existing concepts), in this case, proceeds during on-going interactions both internal and external to the subject, resulting in the familiar frame-by-frame stream of conscious subjective experience. In other words, whether articulating knowledge (reflecting existing concepts) or acting in situations or episodes (also reflecting those same existing concepts), interactions proceed and do so regardless of whether intentional consciousness attends to them or not, and the two activities are essentially the same.

To clarify this point, according to the final eidetic description, consciousness in the phenomenal sense accounts exclusively for the experience, not the cause, of on-the-job thinking. The considerably complex task of locating cognitive or even physiological structures responsible for a consciously aware and volitional ultimate perceiver and decision-maker, were mitigated by the imaginative removal of Dennett and Kinsbourne’s “homunculus” (1992, 185), and application of Carruthers’ (2007) thesis on the illusory nature of conscious affective will. The problematic nature of Eraut’s paradox, is removed when one abstains from subscribing to the semantics implied by traditional dual process theories in terms of the explicit-tacit dialectic. The ability to refer to knowledge in *clear explicit terms* (type two thinking, according to dual processing theories), telegraphs the assumed presence of a volitional homunculus somewhere inside the thinking system. Being able to later use that same knowledge also

in *ways that are largely tacit* (type one thinking, according to dual processing theories) is only a problem in light of the conspicuous presence of the homunculus, who is now, inexplicably dormant, inactive, or unaware. In other words, if traditional definitions of consciousness (as implied by dual process theories) are considered (definitions in which the paradox is indeed rooted), then Carruthers' (2007) assertion that thoughts are *always* unconscious, renders *both* forms of thinking cited in the paradox as unconscious, so there is essentially no difference between them, and therefore, there is no paradox.

In the tradition of Merleau-Ponty (1962) and Van Manen (1996), descriptive vibrancy and creativity was sought in the final eidetic description via development of the interview-room analogy. It was stressed in chapter five, that analogous representation is presented, precisely, as a phenomenological description, and not a model. It is rooted in the phenomenological attitude characteristic of a science of subjectivity, and not in the natural attitude characteristic of a science of objectivity. It is intended to “clarify”, rather than “quantify” (Salkind, 2003, 221), on-the-job thinking in a way that might be “profitable” in advancing human understanding of complex or obscure phenomena in the natural sciences (Roediger, 1980, 231). The relevance of such an analogy thereby seeks justification in light of the obscurities currently hampering further research and development in OJL. Through analogous or metaphorical expression, according to Adams and Van Manen, phenomenology is uniquely equipped to *show* rather than *tell* (2017, 788).

In the interview-room analogy (set in a law-enforcement or intelligence-gathering context), the interview room is the internal domain of the subject, with a main

textured/tinted mirror (representing a repository of existing concepts), giving rise to a visible tinted/skewed image (akin to thoughts), positioned opposite a one-way/semi-transparent partitioning mirror, separating the interview room from the adjacent observation room (representing the external world). The basic set-up is shown below (in illustration 2).

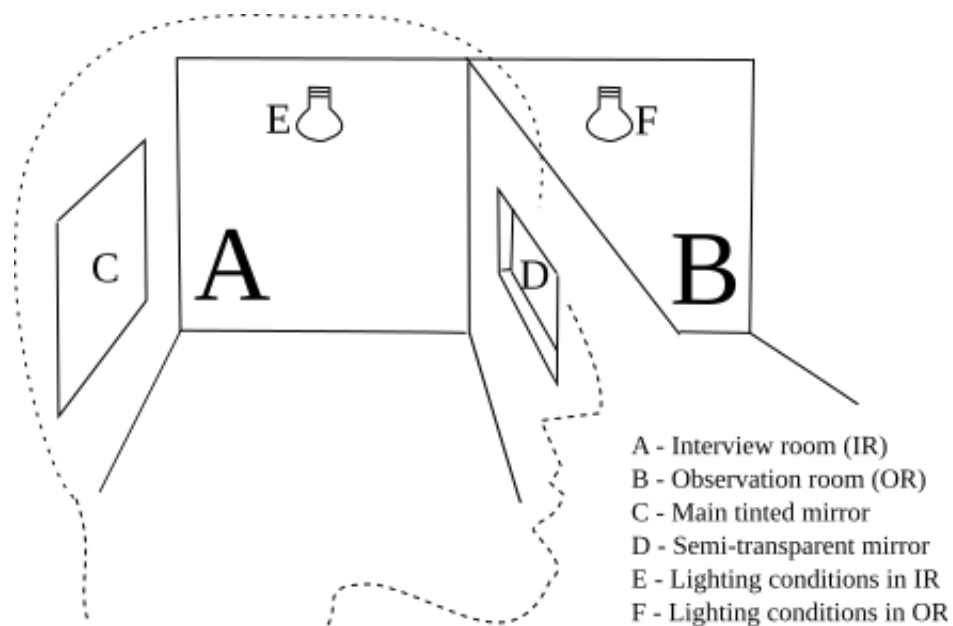


Illustration 2: Visual set-up of the interview-room analogy

The standard lighting set-up (interview in progress) would permit the setting up of concepts (including self-concepts) in a *seeing* of themselves (via the two parallel mirrors), necessary for internal interaction to take place as a temporally-bound and interpretive process, *experienced* repeatedly as change in a procession of successive frame by frame moments of time. Internal interaction thereby also accommodates the notion of experience of *self*, as an experience not *by a subject*, but rather an interpretive (Heideggerian) experience of *being a subject*, as a “phenomenon of being, instead of something that is” (Husserl, 1970, 13). Sartre similarly and succinctly asserted that to *be*, and the *ability of consciousness to know itself*, are one in the same thing (1989,

112). The reflectivity implied by the analogy essentially alludes to the fundamental possibility of an object being able to relate to itself, never directly, but only indirectly. It shows how, in a universe that, (according to our experience of it) contains both the space and time in which for movement to occur, energy (light or sound energy, in the case of a visual reflection or an echo of sound) is able to move from an object, to another, and back to itself, such that it can relate to itself.

From the perspective of the subject, the shift between internal and external interaction in the interview-room analogy is represented by a shift in the lighting conditions in the observation room. A more brightly-lit observation room would permit the image (thoughts) portrayed in the main mirror to once again become tinted/skewed representations of external objects out in the world (since the one-way partitioning mirror would lose its reflectivity and thereby become a transparent window), and no longer a tinted/skewed representation of itself. This analogy is focused on the perspective of the subject, and seeks to describe the simultaneous nature of sensing and projecting, as they give rise to thinking that is wholly defined by the confluence of existing concepts as tinted/skewed (interpretive) representations of objects in the world, and the objects in the world themselves (of which the subject is a constitution). The interview-room analogy is presented as an “evocative example” (Adams and Van Manen, 2017, 788) of the nature of on-the-job thinking, encompassing both internal and external interaction, and the main tenets of the final eidetic description.

6.2.5 Contributions to the advancement of research and development in OJL

Raelin stressed that any model seeking to promote or facilitate learning in the specific context of work, should integrate “the many traditions underlying its construction”

(1996, 564). In the second part of chapter five, the final eidetic description was presented as just such a prospective tradition, and some of its implications considered with a view to their prospective contribution to a revival of research and development in OJL. Further to Yorks and Kasl's call for a phenomenologically-based perspective in conceptualising or theorising the general notion of learning from experience (2002, 189), the phenomenological description of on-the-job thinking posited in this study, is presented, in the tradition of classical phenomenology, as *prior* to (Brentano, 1995, 8), or *fundamental* to (1973, 46), objective science, as an additional perspective to potentially underpin modern education and learning theories pertaining to OJL, which currently reside predominantly on foundations rooted in cognitive science. Following the deep reflective nature of the efforts to articulate a final description of essence, elucidated throughout the first part of chapter five, the second part was dedicated towards the more practical and specific context in which the original research interests were conceived.

The centrality of general concepts, as indicated by the final eidetic description, initially appeared to corroborate the use of traditional thinking and reflecting tools, in the tradition of Dewey (1910), to assist in effective creation, modification, and use of such concepts. Existing tools, however, which lack conclusive evidence ascertaining their efficacy and usefulness in practice (Staniforth and Harland, 2006; Noormohammadi, 2014), were criticised in chapter two for residing on tenuous theoretical foundations, pending the articulation of more robust definitions of the phenomenon of thinking. Marsick et al. stressed that future research should be intervention-based, to find out what "*actually works*" in enhancing OJL (2006, 799). A theoretical distillation of existing tools was deemed warranted, which would facilitate efforts by researchers to

validate any such tool/s as fit for purpose. Based on the essential nature of on-the-job thinking, as depicted in the final eidetic description, it was argued, that a working thinking/reflecting tool used by PFTs should incorporate various specific features likely to enhance its efficacy and usefulness. In this respect, the findings of this study posit constituents of an initial set of guidelines and considerations for such a distillation process.

Alongside the notions of scientific, critical, lateral, or reflective thinking, it was argued that tools should incorporate a phenomenological qualitative aspect, whereby professionals are able to acknowledge the importance of subjective experience of the world, in addition to the objects and objective processes observable in it, and on a deeper level, to suspend judgments based on apparent objective facts, by questioning their fundamental tenets. Similarly, the notion of threshold concepts as defined by Meyer and Land (2003), and their formation as a worthy feature of initiatives designed to enhance on-the-job thinking, represented a similarly engaging criterion for the distillation of models and tools.

An additional suggestion was made, that thinking and reflecting tools should be designed for opportunistic, rather than deliberative, use. In accordance with the final eidetic description, any attempt to enhance on-the-job thinking should embrace the spontaneous and fluid nature of interaction described by the participants in practical OJL contexts, and consider on-the-job thinking less as an abstracted or isolated activity, removed from actions themselves, and more as something to be *felt-in-progress*. Engagement in regular, scheduled, and deliberative bouts of reflection throughout the

career span, as implied by traditional thinking/reflecting models and tools, was portrayed, taking into account the more fluid nature of on-the-job thinking implied by the participants, as an unrealistic goal.

The development of a “comprehensive theory” of OJL has long been the aim of researchers in the field of WBL (Raelin, 1996, 563), and further to Husserl’s assertion that phenomenology constitutes the type of secure objectivity that a truly complete science demands (1973, 55), any comprehensive theory of OJL, including any interventions/initiatives derivative of it, should incorporate the additional features uncovered by a phenomenological description of its essential nature. The centrality of self-concepts, and the reciprocity of conceptualising and feeling, for instance, were considered as just such additional main essential features.

If self-concepts were akin to blueprints or guides to thoughts and behaviours during episodes and situations, then interventions designed to promote the formation of sound self-concepts conducive, in turn, with sound learning outcomes, were presented as worthy foci for research and development in OJL. Similarly, considering the centrality of feelings and feeling states as triggers to thoughts and behaviours, interventions designed to assist professionals in understanding and managing their feelings, could similarly be expected to enhance the prospective formation of sound learning outcomes. Yorks and Kasl argued in favour of providing educators with guidance on how to work with emotion and feeling in the context of adult education (2002, 190), with a deeper compatibility between OJL and psychotherapy similarly corroborated by Liou (2018, 84).

The centrality of language as an important feature of thinking in the reconsolidation of existing concepts, gave credence not only to acts of inner-speech or self-talk, but also verbalised and written forms of communication with others, incorporated into learners' schedules as opportunities for interaction on various levels in the promotion and facilitation of on-the-job thinking. According to Marsick et al., workers do not typically set out to, "accomplish particular ends through preplanned means," but rather, "their choices evolve from the interaction with others in the midst of work activities" (2006, 795). The notion of on-the-job thinking as interaction, similarly supports the use of interventions designed to enhance interactions with self, others, and the environment. Beard and Wilson cited, in this sense, "active engagement" as a main fundamental tenet of experiential learning (2015, 5)

The autonomy of thought, or the notion of subjects as experiencers of thought rather than causers, consolidated the importance of OJL initiatives and interventions, whatever form they actually assume in practice, as crucially influential to the formation of sound general concepts. It was argued in the latter part of chapter five, that initiatives be based primarily on the formation of sound *core*, *threshold*, and *self* concepts (in their capacity as agents of positive change in on-the-job thinking) most likely (as tinting/skewing agents), to lead to the formation of desirable learning outcomes, rather than exclusively on the attainment of predefined objective learning outcomes, which may actually be promoting a tendency among learners, towards outcome-achievement by any means.

Initiatives and interventions designed to enhance OJL, in the health and fitness context, might involve the consideration of workplaces as constructivist learning environments, in which educators and trainers play a valued role. Jedaar et al. acknowledged the prospective role of “teachers and facilitators” in developing strategies to help learners build confidence (2009, 478), or providing “observable models” of tacit skills for learners to “follow and imitate” (Raelin, 1997, 564). In the absence of on-going support, the active enhancement of OJL was similarly discussed in terms of self-directed, individually-sponsored initiatives, since organisations must necessarily balance learning with work commitments, and increasingly expect professionals to be responsible for their own development and competence (Raelin, 1996, Jedaar et al., 2009).

In this final recapitulation, some of the arguments comprising the essence of the thesis were summarised, and various key insights punctuated or elaborated. At this stage, the thesis moves beyond the discussion developed throughout chapter five, and towards a grounding of the findings in the original context in which the study was conceived and developed, namely, OJL by PFTs in the context of the health and fitness sector. In the next section, the findings are appraised in terms of their relevance, and more closely evaluated in light of the two main research questions. Some of the original research problems identified through a review of four bodies of literature, aimed at uncovering the fundamental essence of on-the-job thinking, are considered, as the thesis moves towards a final critical and reflective analysis of the work, and a meaningful conclusion.

6.3 Conclusions and implications

6.3.1 Final appraisal of the first research question

The first research question was concerned with a discernment of the essential nature of thinking, in the context of OJL. It was conceived following the identification of a gap in the literature, where scholarly work aimed at clearly defining the phenomenon of thinking, was lacking. It was argued in chapter two, that the missing work was, in fact, necessary for future prospective advancement of research and development in OJL. The review of literature continued to reveal a number of specific problems that, at least in part, were responsible for, or had contributed to, the gap. In light of these problems, several critical questions may now be asked of the findings which were discussed in depth in the previous chapter. Do the findings constitute a clear description of the phenomenon of thinking in a way that contributes to the current dearth in literature? Does the description define what thinking actually is, rather than what it could or should be? Does it constitute a re-conceptualisation of on-the-job thinking likely to cast new light or reveal fresh perspectives on existing problems in understanding OJL, particularly in view of the tacit-ness problem? Does it fall victim to unnecessarily objectified concepts, or the use of convenient “placeholders” or “conceptual ragbags” (Logie, 2016, 2094)? Does it ultimately offer anything of value in clarifying existing definitions of those acts of thinking cited in theories or models seeking to expound thinking and learning processes?

6.3.2 Clarity and simplicity

The final eidetic description, presented and discussed in depth in the previous chapter (and most succinctly articulated later in section 6.2.4), was based on a number of main themes emerging from an initial phenomenological analysis of PFTs accounts of their on-the-job thinking, which included thinking as interaction, the centrality of general concepts (including those pertaining to self) and feelings, and the problematic role of conscious awareness and volition. Besides their articulation in a verbal description, the themes were also creatively incorporated into a visual analogy (the interview-room analogy, also presented visually in section 6.2.4), for further clarification and simplification. In this sense, considered in terms of the development and provision of a description and accompanying analogy as its principal outcome, the study addresses the dearth in literature constituted by the lack of scholarly work attempting to discern and clearly define what it means to think in on-the-job contexts. Further studies also seeking, exclusively, to define and clarify this phenomenon, are needed before stakeholders in education and learning are able to agree on a common working conceptualisation of, what currently appears to be, an otherwise precarious or difficult problem.

6.3.3 Actuality versus potentiality

Emphasis was made, throughout the study, on uncovering the *actual* and *essential* nature of the phenomenon of on-the-job thinking. Further to the clarity cited in the previous section, which was also attributable to the phenomenological reduction process itself, the notions of actuality and essence can be more closely appraised here. Phenomenological reduction aims to strip away incidental features, and reveal only

those aspects of the phenomenon which are truly essential for the preservation of its fundamental meaning. The process is “destructive” (Heidegger, 1982, 23), and aims at dismantling the sort of objectified constructs and “conceptual ragbags” (Logie, 2016, 2094), that limit our understanding of complex fundamental concepts. In terms of *essential nature*, a central focus of the final eidetic description is retained on what thinking actually is, rather than what it could or should be, or in other words, on its *essences*. Essences are defined here as, precisely, those qualities that make the phenomenon what it is, rather than something else. In chapter two, reference was made to Aristotle's four causes, for some added philosophical context to this notion. The four causes idea helps shed some light on how modern theorists philosophically conceptualise objects, or in the context of OJL, how education and learning theorists, specifically, conceptualise thinking. While the first three causes (material, efficient and formal) primarily refer to the constituents and inner workings of objects, the fourth (final) cause, is concerned mainly with function or purpose (Todd, 1976, 319). It was argued in chapter two, that prevailing theories and models seeking to expound thinking and learning processes, have been excessively concerned, in the tradition of Dewey (1910), with the final cause, and that a discernment of essential nature, based increasingly on the first three, is warranted.

In this sense, the final eidetic description is considered to address what thinking actually is, rather than what it should or could be, because of the focus it retains on what *it* is made of and how it works (the first three causes), rather than what purposes *it* exists to serve (the fourth/final cause). Aspects of the description that apparently, at face value, allude to learning *outcomes* (and therefore the fourth/final cause), are in fact included in their capacity as clues about the inner-workings of the phenomenon. For

instance, it was said that general and self-concepts, as well as feelings and feeling states, represent a significant influence on learning *outcomes*. The intended emphasis, however, is not on learning outcomes as such, but rather on the centrality of concepts and feelings as essential components of the phenomenon of thinking, without which it could not, in fact, as a phenomenon, be considered as thinking at all.

To clarify further, learning itself was portrayed as inseparable from, at the most fundamental and phenomenologically reduced level, change. Change affecting the physical objects regulating both concept-reposition and use, and feelings, proceeds in the causally governed realm of the natural spatio-temporally-experienced universe, which includes all unfolding events and interactions between objects internal and external to subjects, existing within its fabric. In other words, the physiological mechanisms regulating change in existing concepts and feelings, are an essential part of the phenomenon we define as thinking, without which it could not be defined as thinking at all, but rather, would have to be something else entirely. Without the constituent content of general concepts, for instance, either in the event of its outright absence, or a total inability to access or recall it (as might occur in cases of severe dementia), then something that looks like on-the-job thinking, as it is defined by the final eidetic description, could not in fact be, on-the-job thinking. In this respect, the final eidetic description which is posited as a response to the first research question, is dedicated to essence and actuality, not purpose or potentiality.

6.3.4 Fresh perspectives on the tacit-ness problem

In terms of originality, the focus on essence, as well as the suggestion that on-the-job thinking proceeds with interactions between objects in the world (both internal and

external in relation to the subject), independently of the volitional control of some ultimate perceiver, located somewhere inside each subject, diverges significantly from the traditional assumptions in education and learning theories rooted in cognitive science. The questionable involvement of conscious awareness and volition, in particular, constitutes an alternative, and perhaps even radical, perspective on some of the problems associated with thinking in the context of learning, that are problematic precisely due to their roots in traditional conceptualisations of thinking and consciousness. The tacit-ness problem, for instance, which was identified as a significant factor preventing further study of the nature of OJL, was, in light of renewed discourse on the nature of consciousness itself, argued (in the previous chapter) to be unsound as a justification for cautioning stakeholders against favouring OJL as a process, for two reasons. First, according to traditional conceptualisations of consciousness, thinking (and learning), is *always* unconscious (Carruthers, 2007, 199), inasmuch as subjects are only indirectly and interpretively aware of their own thoughts, a notion supported by the final eidetic description (and analogous portrayal of on-the-job thinking). And second, if learning outcomes are cautioned against on the grounds of them being tacit, then *all* types of learning (including that taking place in formal educational settings), would have to be approached with the same caution, since the possibility of indeterminate amounts of unconscious learning emerging simultaneously alongside any apparently conscious learning, would always remain an unquantifiable, ever-present and unavoidable risk.

Apart from setting all forms of learning on an even platform in terms of risk, the final eidetic description offers fresh insight on the existing problem of the insurmountable “complexity” (Eraut, 2004; Marsick et al., 2017), that is associated with on-the-job

thinking in action. It was argued, in the previous chapter, that in the absence of an ultimate volitional perceiver exerting conscious (in the traditional sense) control over thinking and learning processes, the considerable challenge of having to explain the mechanisms by which learners “continuously choose” (Kolb, 1999, 3) learning modalities, styles, and thinking types, is removed.

6.3.5 Definitions of distinctive thinking acts

The first research question was originally posited following the observation that despite an evident juxtaposition of *doing* and *thinking* in models seeking to expound the learning process, and a bestowal of comparative importance on the two, the terms used to describe various types of thinking are typically unclear, poorly defined, and inconsistent with the theoretical foundations upon which they are based. What does it mean, for instance, to “hypothesise” or “mentally elaborate” (Dewey, 1910)? How does one “reflectively observe”, or “conceptualise” (Kolb, 1984)? What about acts of “interpreting” or “examining” (Marsick and Watkins, 1990)? Given that all these terms have been cited as important parts of the learning process, how much do we really know about the activities they define, and how robust are the theoretical tenets underpinning them? If such terms are poorly defined, then how robust, for that matter, is our understanding of the learning process itself, given that up to half of it is typically acknowledged to be comprised, in addition to doing, by *thinking*?

Through its focus on thinking as interaction, proceeding independently of conscious awareness and volition, via mediation by general and self concepts, the final eidetic description is intended to provide clarity and consistency in understanding common thinking-based terms, by drawing on themes that accommodate their intuited

possibilities. In other words, in terms of thinking as a *reflecting* of objects out in the world, via the tinting/skewing veil of existing concepts, how different is, say, *reflectively observing* to *interpreting* or *examining*? In terms of understanding what thinking actually is, are they fundamentally different from each other in a way that cannot be explained, on a more superficial or incidental level, by the mediating effects of existing concepts according to the context of particular situations or episodes? How, for that matter, does *conceptualising* differ from *mentally elaborating* in any way that is not directly dependent on the interactions taking place, which have already been portrayed as inseparable from the phenomenon of on-the-job thinking itself? In other words, in light of a simplified phenomenological description of the phenomenon of thinking, further objectifying thinking acts into separate concepts in a way that adds complexity to the overall phenomenon of learning, and limits our understanding of it, is hereby argued to be unnecessary, when conceptualising thinking and learning processes in the context of research and development in OJL.

6.3.6 Final appraisal of the second research question

In chapter five, prospective implications of the final eidetic description (and accompanying analogy) were discussed, and, while retaining a general commitment to rigour, as outlined in chapter three (section 3.5.3), this discussion was carried out in a manner that balanced the findings and emerging insights, with alternative interpretations, philosophical ideas, and existing literature. At this stage, some of the insights gained during the data collection, analysis, and discussion phases collectively, can be grounded in the original context of the study, to appraise the general relevance of the study, with respect to the second research question specifically. So, in the context, of PFTs' OJL, what do the findings mean in practice? How might interventions

and initiatives in the health and fitness sector be influenced by the final eidetic description, exactly, in the event of its resonance with stakeholders as a valid portrayal of on-the-job thinking? Are such implications also relevant outside the context of the health and fitness sector? Also, what are the broader more wider-reaching prospective contributions of the findings, in a theoretical sense, if any?

The features of the final eidetic description related to thinking as interaction, and the questionable involvement of conscious awareness and volition, were presented as justification for the validity and importance of OJL interventions and initiatives, on the grounds that new insights have a limited capacity for generation via internal interaction alone (thinking as an isolated activity), but rather, that experiential content must, at some point, be presented to subjects, in a variety of forms, via external interaction with others and the world. Such interaction may be promoted, facilitated, and/or influenced by stakeholders in several ways. In the previous chapter, interventions and initiatives were defined as inclusive of either individually or organisationally initiated/sponsored efforts to promote, facilitate, or enhance OJL, on either a cross-sectional or longitudinal basis, ranging, for instance, from an individual professional incidentally reading or hearing about some particular aspect of OJL on the one hand, to their engagement in, say, an intensive development programme involving various forms of tutelage, mentorship, on-going support, and/or assessment on the other. In the context of practical considerations such as these, therefore, which aspects of the findings assume particular significance for PFTs?

6.3.7 Example of a concrete intervention

Craig and Eickhoff-Shemek (2009) presented a pilot project that was carried out at the University of South Florida, as a fitting example of an organisationally-sponsored structured OJL intervention for PFTs, that adds some realistic context to the ensuing discussion. The project involved a mix of theory-based lectures and direct application of knowledge and skills via sessions with clients. It was carried out over the course of a semester, as preparation for a full internship, which would take place the following semester. The project was based on a number of goals, including the development of organisation, communication, time-management, teaching, and fitness assessment skills, as well as self-confidence in prescribing exercise to a broad range of client populations (2009, 9). The personal training sessions with clients were followed by guided (using a series of scripted questions), and documented personal reflections, as well as group discussions. The entire project, which could hypothetically be replicated by any vocational training provider in the sector by way of internship or placement course components, or distinctive short courses in their own right, represents a useful framework against which the inclusion of some of the additional specific features of the final eidetic description might be evaluated, in this case, the centrality of self-concepts, and feelings.

The centrality of self concepts, for instance, would warrant the inclusion of exercises or activities in such a programme wherein PFTs are encouraged to reflect on, and define, how they they see themselves as trainers. By reflecting further on the origins of these self-concepts, where they came from, how they developed, who else might have influenced them, a re-evaluation and reconsolidation of those self-concepts becomes viable. Questions along the lines of, what sort of a trainer would you like to be, and

why? What would this ideal trainer do in such and such a situation? What do you expect they might think about this or that? What are the similarities and differences between you at work, right now, and this ideal type of trainer? How might you bridge this gap? Where PFTs struggle to formulate coherent senses of their ideal selves, alternative approaches might be attempted, such as, what sort of trainer would you most definitely *not* like to be? At this crucial stage, tutors and peers alike would be able to critically discuss these types, helping to facilitate the development of increasingly sound concepts of self, and evaluate some of the tenets upon which they are built, wherever question marks arise. Where the ideal type of trainer is identifiable, role-play exercises or any activities that help the PFTs to clearly visualise, and identify with, their reconsolidated senses of themselves could be carried out. In Craig and Eickhoff-Shemek's (2009) project, exercises and activities related to concepts of self would be relevant both during the theoretical lecture-based phase, in preparation for the practical sessions with clients, as well as during the sessions themselves, and included in the scripted questions for subsequent reflection and discussion.

In the previous chapter, in light of the centrality of feelings and feeling states in on-the-job thinking and learning, modified psychotherapy techniques were discussed as worthy components of initiatives and interventions in OJL. Here, scripted questions might initially be used by tutors or peers, designed to encourage PFTs to talk about how they felt during various situations or episodes in the past, or how they would feel during given hypothetical scenarios. Upon identifying recurring and significant feelings in specific situations and episodes, and the reasons underlying them, their appropriateness in the context of sound learning and professional development, may be evaluated. Established techniques for effective management of feelings might also represent

valuable components of theory-based and post-practice reflection sessions. Counselling, in its own right, carried out by professionals aware of the feeling-dimension of OJL, regardless of frequency, might similarly constitute a valuable service by stakeholders intent on effective on-going learning and development, in a sector that is, after all, considered rich in “emotional service labour” (Maguire, 2001).

The ability to reconsolidate, or at least make sense of, concepts or feelings, would naturally be enhanced by the products of a successful distillation of existing thinking and reflecting models and tools by future researchers, as discussed in the previous chapter. Where professionals are able to ask searching, insightful questions, guided by more effective tools designed for opportunistic rather than deliberative use, the development of sound general concepts and the management of feelings and feeling states conducive with effective on-going OJL, become more viable possibilities.

6.3.8 Professional perspective

While Craig and Eickhoff-Shemek's (2009) project is considered here as an example of an OJL intervention, similar manifestations of revised OJL-related content would be possible in the continuing professional development (CPD) context as short courses, which, in the European health and fitness sector, is a technical requirement for the maintenance of membership to various professional organisations, including the European and UK registers for exercise professionals (EREPS, 2018; REPs UK, 2018). Similarly, outside the formal education or accreditation contexts, OJL interventions incorporating aspects of the final eidetic description might also be organisationally-sponsored in professional environments. Health clubs and personal training companies with dedicated training managers, or general managers who have incorporated training

and development as an important aspect of their role, might organise various initiatives alongside on-going everyday work by their employees.

In terms of individually-sponsored initiatives, any or all aspects of structured interventions may be modified into self-directed programmes, presented to PFTs motivated to learn and develop, via online or other forms of media, including publications, seminars, conferences, and the like. While the health and fitness sector is used here to provide context for the applications discussed so far, it seems likely that other sectors, also based on close interpersonal interaction with service-users, might represent similarly conducive environments for updated OJL interventions. Research on reflective practice, has traditionally emerged from the fields of healthcare, nursing and midwifery (Ekebergh, 2007; Sian Nicol and Dosser, 2016), and education (Noormohammadi, 2014), showing an increased sensitivity in such professions towards the importance of reflecting/thinking, learning, and any efforts intended to enhance them. An element of cross-over is evident, based on both the importance of pedagogical skills (Craig and Eickhoff-Shemek, 2009), and tendency towards emotional service labour (Maguire, 2001), in the cases of teaching and nursing/midwifery respectively, between the health care, education, and health and fitness sectors.

6.3.9 Academic perspective

Discussions on concrete interventions and specific activities or exercises potentially comprising them, admittedly address the second research question on a relatively superficial level. The implications of a clear description of the phenomenon of thinking in the context of OJL, reflect those original problems identified in the review of literature, presented as the main catalysts propelling the study forwards. In short,

attempts at uncovering the essential nature of the thinking activities cited in education and learning models and theories through appropriation of existing literature alone, were found to be insufficient, engendering the need for new research in the area. At this stage, the relevance of the findings can be appraised from an abstract/theoretical perspective, in the context of the academic literature. The final eidetic description is considered here, in terms of direct implications on existing prevailing theories, of which KELT in particular, has been particularly influential.

Kolb's (1984) experiential learning cycle seeks to model the learning process using nodes based on both *doing* (concrete experience and active experimentation) and *thinking* (reflective observation and abstract conceptualisation). First, the final eidetic description, in its depiction of thinking as interaction, challenges the separation of thinking and doing, on the grounds that thinking is not an isolated activity separated from action. In other words, *doing* cannot be carried out without various interactions between objects internal to the subject (from which thinking emerges as a phenomenon), and *thinking* cannot be carried out without reflecting objects and their interactions in events, episodes and situations in the world, external to the subject. Also, as a product of interaction, thinking can also be said to be, an action, an act, and so, is ultimately, a form of doing in itself. Such an interpretation emphasises on-the-job action, or *doing* and *thinking* simultaneously, as, simply, interaction between objects in the world. On-the-job thinking, as a phenomenon, therefore, describes aspects common to all four modalities in KELT.

Second, and further to the notion of thinking as inseparable from interaction, the questionable role of volition also adds an interesting dimension to any discussion on the

KELT model. The main difference between the modalities of being engaged in a concrete experience (doing), or in active experimentation (also doing), according to KELT, is that during the latter form of doing, the intent of the learner is, specifically, to test new ideas and insights, while in the former, intent is inconsequential. Since active experimentation (engagement in action), and being engaged in a concrete experience (also engagement in action) are essentially the same thing (doing), the distinguishing characteristic, therefore, is volition, both in terms of whether the action is purposely orchestrated in the first place, and whether the intent of the learner either is, or is not, to test new ideas. Removing volition from the equation, essentially strips these two modalities (concrete experience and active experimentation) of their main distinguishing characteristic.

The KELT thinking modalities of reflectively observing and abstractly conceptualising suggest, according to the final eidetic description and accompanying interview-room analogy, interaction taking place, first, as a reflection of objects external to the subject out in the world (reflectively observing), and second, as interaction taking place as the prior impressions of external objects become tinted/skewed reflections of themselves, internally (abstract conceptualisation). These interactions, on all levels, proceed as on-the-job thinking (and any changes to existing general concepts that may result), which, according to the final eidetic description and accompanying interview-room analogy, is inseparable from such interactions between objects in the world (including those both internal and external to individual subjects) that are part of the fabric of the universe, to which intentionality attends, giving rise to (phenomenally) conscious experience of self and the world. In this respect, internal and external interaction, correspond with abstract conceptualisation and reflective observation, however, further to Eraut's (2004)

philosophical position on the formal-informal learning dialectic, these should be considered as a continuum, and not necessarily as dialectically opposed. Various expressions of the phenomenon, in this sense, could occur at certain points along it, as indeed, was suggested by the interview-room analogy, where, if one were to think of a dimmer switch, such a position was mediated by the intensity of lighting conditions inside the observation room.

Stripping away distinguishing features of the various KELT modalities, and avoiding the temptation to objectify additional distinctive abstract constructs, collapses the cycle, but only if the cycle is considered to be a sound explanation of the actual nature of experiential learning. In the absence of clear descriptions of the phenomenon of on-the-job thinking in the context of learning, such as that presented in this study, researchers and scholars in education have been forced to turn to existing models to explore essence, when an exposition of essence is not necessarily what such models were intended to achieve.

Finally, in terms of deeper implications, the simplified and phenomenologically reduced depiction of thinking, and the notion that (phenomenally) conscious experience emerges from it, as implied by the interview-room analogy, as, ultimately, little more than the possibility of an object being able to somehow “see” itself. The idea that, whether one considers light or sound energy in the cases of visual reflections or auditory echoes respectively, it is the interaction between an object and reflections/echoes of itself as a thing among other things in the world, itself a phenomenon of movement (of light or sound energy in a spatio-temporally-experienced world), ultimately makes all thinking and consciousness possible, is a fascinating one.

Or in other words, the idea that thinking and consciousness can arise from, at some deep and fundamental level, physiological entities being able to echo or reflect themselves, is an enticing idea clearly explicated by the deepest and most fundamental level of phenomenological reduction reached, at least, in this particular study, at which the final eidetic description and accompanying interview-room analogy are set.

6.4 Study appraisal

Following an appraisal of the content and findings in the previous section, and some detailed discussions on rigour presented earlier in chapter three, the study can now also be critically evaluated from a methodological perspective.

6.4.1 Sampling limitations

Based mainly on the use of small sample sizes, generalisability of findings is commonly presented as a limitation in qualitative phenomenological studies (Dodds and Grajfoner, 2018; Lancer and Eatough, 2018). Considering the specific context of phenomenological research, and the philosophical ideas underlining it, however, this assertion warrants some further discussion. Generalisability, defined in the sense of *universal applicability* of findings, as implied by Creswell's (2014, 251) definition, is primarily an assertion based on the quantitative, as opposed to qualitative, approach. Sound judgements about the *quality* of research aligned with the latter paradigm, are subject to due consideration of the philosophical assumptions informing given qualitative studies. Further to the discussion on qualitative rigour presented in chapter three (section 3.5.3), since findings in given qualitative studies are typically contextualised, generalisability is not actually an "expected attribute" (Leung, 2015, 326). Where context itself represents a key aspect of the underlying research aims, the notion of generalisability, and its importance, becomes increasingly debatable.

Phenomenological research aims at an uncovering "intentional references" (Husserl, 1960, 79), to reveal the pure essence of a given phenomenon. Whether the given

phenomenon is a fundamental conceptual problem, like temporality or consciousness in the case of works in classical phenomenology, or the lived experience of subjects in a particular and unique context, as in the case of more modern phenomenological research, results will exclusively concern the nature of the concepts or initial data to which the phenomenological method is applied. The goal is typically a reduction to, and description of, pure essence, and not the creation, validation, or indeed use, of explanatory or predictive theories seeking to make claims of universally applicable scope, outside the boundaries of the original data. In other words, it is the task of phenomenology to posit the prospective essence of the original phenomenological data, to *reduce* it, to reveal, or make visible, its essential nature, and not to measure, test or otherwise determine its applicability across a wider landscape. Applicability of results in phenomenological research is instead considered in terms of *resonance* with readers. What phenomenology is able to reveal, may, in the wider research context, very well prompt the development of additional questions, assertions or hypotheses by readers. Qualitative, or indeed quantitative methods aimed at the consideration of universal applicability, may subsequently be enlisted to further explore, validate, or otherwise measure or test, in quantifiable terms, such questions, assertions or hypotheses in future research, as researchers see fit.

The original phenomenological data used in this study were interpretive researcher annotations of ten interview transcripts. The applied phenomenological reduction and eidetic analysis, aimed to get at the heart of the data, to articulate a deep eidetic description within the boundaries of the ten participants' accounts, stripping such accounts down to their most fundamental essence. This notion might be explained in a more visual manner as, not a zooming out, to see the phenomenon in light of its place

among other phenomena in the world either like it or unlike it, but rather, as a zooming in, to see the phenomenon only in light of itself.

In this regard, the method comprised two main phases. The first was based primarily on modern phenomenological research methods in order to arrive at an inter-subjective account of participants' experiences of on-the-job thinking. While many modern phenomenological studies based on questions suitably addressed by composite summaries need not necessarily proceed further, a second phase was carried out, in the style of classical phenomenology. Inspired and motivated by the classical phenomenological style of intensive philosophical reflection on fundamental problems, given the problematic nature of the phenomenon in question (on-the-job thinking), a further reduction and eidetic analysis of the initial eidetic description was carried out in earnest. The resulting final eidetic description and analogy, as stressed in chapter five, is intended as an explication of deep essence within the scope of the original data provided by the participants, with a view to addressing the current impasse hampering further exploration of OJL resulting from obscurities in the philosophical underpinnings and fundamental concepts of modern education and learning theories.

The final narrative is intended to reveal aspects of the phenomenon of on-the-job thinking, that achieve "resonance" (De Witt and Ploeg, 2006, 226) with readers, with a view to prompting and inspiring additional questions for further research and development in OJL by any additional methodological means. The findings of this study are, therefore, hereby framed within the limitations of contextual description, and do not seek to make generalised or universally-applicable claims outside the scope of

the data yielding them. They aim, rather, at a deep essence that may, or may not, by all means be shared with other phenomena, where such prospective commonalities are merely suggested, considered, or discussed, but certainly not proven. The suggestions for further research made later in this chapter, are posited, based entirely upon whether or not the posited re-conceptualisation of on-the-job thinking articulated in the final eidetic description, achieves due resonance. Resonance itself, or rather, a potential lack thereof, therefore, constitutes an important limitation concerning the scope of this study.

6.4.2 Methodological coherence

A further critique of qualitative research, and a commonly cited limitation in phenomenological studies in particular, is based on the claim of poor methodological coherence. Such claims are generally made, based on a comparison of phenomenological methods, with the otherwise rigorously validated methods and statistical tools associated with the quantitative approach, and based essentially on correlation and comparison or objective criteria. Judged from the quantitative perspective, therefore, the lack of rigorous and/or standardised methodological guidelines or models governing data collection and analysis procedures in qualitative studies, lend apparent credence to claims that phenomenological studies fail to meet “scientific criteria” (Oliveri and Pravettoni, 2018, 264).

The debate surrounding the nuances distinguishing, say, the descriptive and interpretive schools, has led to some confusion among phenomenological researchers (Skea, 2016; Aagard, 2017), whose studies consequently rest on apparently tenuous philosophical

foundations, and are thus undermined. Some confusion, for instance, also tends to revolve around whether phenomenology itself is indeed a *philosophy*, or a *method* (Shi, 2011, 4; Skea, 2016, 1134). Qualitative research, in general, has been similarly criticised on the grounds that it is not based on one single unified theoretical or methodological concept (Flick, 2002, 7).

What is construed as methodological incoherence from a quantitative perspective, however, does not necessarily attenuate the academic or scientific integrity of a given study, when assuming a perspective rooted in distinctly qualitative ideas. Considering the range of contexts addressed by qualitative researchers, and the various diverse tools appropriate for use in those contexts, a degree of methodological flexibility and adaptability is expected (Dawson, 2013, 119). In the absence of universal guidelines or dedicated “scientific criteria” (Oliveri and Pravettoni, 2018, 264), qualitative researchers have an added responsibility to clearly discern their philosophical orientation or “theoretical lens” (Creswell, 2014, 98), in relation to their specific research questions and phenomena of interest. A valid critique of any given study in this respect, therefore, cannot be mounted without due consideration of the very philosophical assumptions underpinning the researcher’s claims, provided of course, these are clearly elucidated.

Regardless of perspective, meanwhile, any critique of phenomenological research based exclusively on the assumption of uncertainty about the status of phenomenology as either a *philosophy* or a *method* (Shi, 2011, 4; Skea, 2016, 1134), lacks validity, and betrays a limited understanding of phenomenological concepts. While clarifying its

basis on the *philosophical attitude*, as opposed to the *natural attitude*, Husserl (1960) clearly depicts phenomenology as a method, establishes the basic tenets of a more specific and robust *phenomenological attitude* (epoché), and proceeds to demonstrate its application, via a range of tools, in his investigations of fundamental problems like consciousness and temporality. Heidegger (1982) and Merleau-Ponty (1962) similarly refine and clearly demonstrate classical phenomenological methods in their work on fundamental problems. While publications like Brentano's (1995) *Descriptive psychology*, Husserl's (1960) *Cartesian meditations*, Heidegger's (1962) *Being and time*, Sartre's (1989) *Being and nothingness*, and Merleau-Ponty's (1962) *Phenomenology of perception*, can be read as works of philosophy in their own rights, exquisitely revelatory of the weighty subject matters with which they engage, they also show, with often great clarity and rigour, the methods employed in reaching the deep and profound insights they reveal.

Perhaps a more valid methodological critique than that based on the philosophy-method debate, rests on the descriptive-interpretive dialectic evident in the discourse on modern phenomenological research techniques, which can be further elaborated here. Giorgi et al. (2017), and Smith and Osborn (2008), have provided comprehensive guidelines for researchers carrying out descriptive or interpretive phenomenological studies, respectively. Rather than enrich the field of phenomenological research with a more diverse range of tools and techniques applicable according to context and specific research questions posed, however, the existence of the two styles has resulted in challenges mounted by proponents on either side, on the very credibility of either approach, leading to some confusion (Skea, 2016). As a result, modern phenomenological researchers face the additional responsibility of discerning their

position specifically in relation to the two prevailing styles, or in short, “pick a side”, when, as argued in chapter three, this might not strictly be necessary.

In this study, the descriptive and interpretive approaches were discussed, in chapter three, with a particular focus on their impact on the initial stages of analysis. A fundamental characteristic of modern research is its focus on collected data, rather than on initial problems of a more conceptual nature, as in the case of classical works of phenomenology. Modern phenomenological researchers must employ particular methods of collecting and initially processing such data, that are consistent with the context, and the research questions being addressed. Given that the descriptive and interpretive approaches espouse unique ways of initially approaching the data, it is at this juncture that modern phenomenological researchers are expected to clarify their position in relation to the two styles. In this study, therefore, such positionality was discussed in section 3.3.3, with regard to the initial phases of the five-step research method employed. Specific reference is intended here, towards the decision to proceed with analyses of researcher annotations (the interpretive style), rather than researcher descriptions of meaning-rich units (the descriptive style).

The five-step method was, overall, adapted to the context of the study and the specific research questions posed, and comprised *various* expressions of phenomenology, not limited to the two modern schools, since a distinctly classical style was particularly dominant throughout the final phases of the study. The idiosyncratic, tailored structure of the five-step method, therefore, renders it susceptible to, from the perspective of a dedicated and established set of predefined “scientific criteria” (Oliveri and Pravettoni,

2018, 264), valid critique on the grounds of methodological coherence, inasmuch as it is not priorly established or predefined. It is based on an interpretation of the fundamental philosophical tenets of phenomenology, appropriated from a range of sources, that is wholly influenced by researcher positionality and reflexivity, which is discussed in depth in Annex 1. Methodological coherence, in any modern phenomenological study, in this sense, appears to be directly proportional to the transparency with which researchers are able to elucidate, and ultimately justify, their methodological decisions. For this reason, the five-step method, together with the philosophical assumptions underpinning it, are presented and argued in depth, throughout chapter three. The discourse on methodology explicated therein, is intended to enable sound critique from fellow researchers, in the spirit of academic and scientific integrity, rendering the process and outcomes of the study, wholly contestable.

6.4.3 Language

With its emphasis on description, phenomenological research faces an added limitation as a direct result of its central reliance on language. Pulte succinctly stated that, “no amount of verbalisation makes clear to others that which is outside their experience and have no eyes to see” (2009, 11). In the case of modern phenomenological research, specifically, *description of experience* is key, with researchers often seeking to clarify phenomena in a way that makes them understandable to those who do not have direct experience of, or “eyes to see”, it. Pulte argued that seeking refuge in word, draws us away from the things themselves (2009, 11), challenging Husserl’s fundamental scope of phenomenology as a means to “get at” the “*things themselves*” (1973, 1). If words are, as Vygotsky suggested, “verbal acts of thought”, relating to “generalisations”

(1987, 45) of meanings that essentially differ at a fundamental level, from thoughts based on sensation or perception, then they must have a limited capacity to express the complete essence of experience, which is not always linguistic in nature. Vygotsky added that thoughts are not “*expressed*”, as much as they are “*completed* in the word” (1987, 252), making them “labile” (Lee et al., 2017, 531), and susceptible to reconsolidation each time they are articulated.

In this view, language paradoxically represents an obstacle to phenomenological description despite being its main vehicle. According to Brentano, language creates a “prejudice” that is detrimental to noticing, if it lacks a name for a certain fact (1995, 44). Subjects, therefore, are only able to describe things they have *noticed*. Descriptions of essence are not only constructed by the researcher based on what is noticed, but are also subject to misrepresentation of the original meanings they seek to explicate the essence of. The re-consolidatory nature of thoughts in word are furthermore duplicately subject to distortion, both in their articulation by the participants, and later by the researcher.

Further compounding the fundamental limitations imposed by the use of language, was the fact that many of the participants were bilingual. Further, higher, vocational and much private education in Malta is conducted entirely in English. In her undergraduate research at the University of Malta, however, Fenech (2014) found that despite Malta’s official status as a bilingual country, and high levels of competency in both spoken Maltese *and* English (with a significant segment of the population also fluent in Italian), the native language still tends to be dominant among locals. Maltese nationals typically

reflect their bilingual status via frequent code-switching in daily speech, peppering their spoken English with Maltese words and expressions, and vice-versa.

Despite a tendency towards the Maltese language, Maltese nationals still voluntarily choose to speak English in certain contexts (as did the Maltese participants during their interviews), due to any number of additional factors beyond the scope of this research to ascertain. During the interviews, the few Maltese expressions used by the participants (as a result of their natural tendency towards code-switching), were duly translated by the researcher during the transcription process. While all the participants demonstrated excellent command of the English language, and were all entirely comfortable conducting their interviews in English, it is worth noting that of the full contingent of ten, all but one were bilingual. Only one of the participants was a British national who did not speak any additional languages (PFT06), seven were Maltese (PFT03, PFT04, PFT05, PFT08, PFT09, PFT10, and PFT12), who apart from Maltese could all speak English fluently, including some who also spoke fluent Italian, one was Bulgarian (PFT07), who apart from Bulgarian could speak English fluently, and also Russian, and one was Norwegian (PFT11), who apart from Norwegian could speak English fluently. It is also worth noting that PFT07 and PFT11 who were Bulgarian and Norwegian nationals respectively, had each also spent some time living and working in England, before settling in Malta, where the research was carried out.

The nationalities and languages spoken by each of the participants (and their bilingualism) are outlined here, because such additional factors may have been influential to the essences noted in their accounts (which were naturally language-

based) during the early analysis stage. Costa et al. (2017), in this regard, explored what has come to be known as the “foreign language effect”, on the executive functioning of subjects when solving problems presented in their *second* language. Research has shown a difference in performance in cognitive tasks in bilingual subjects, who show a tendency towards deliberative non-intuitive thinking, when problems are framed in their second language, according, of course, to interpretations based in dual-process theories. While the effects of bilingualism, or indeed any other aspects of language-use, on the findings of this study are unclear, the phenomenon does represent an unknown factor, potentially affecting the final eidetic description in ways that are challenging to account for, and therefore worthy of mention here as a noteworthy limitation.

6.4.4 Prospective modifications and improvements

Further reflection, not necessarily limited to those points discussed in the previous section, revealed some additional methodological insights, which, should the study be repeated, would need addressing. With regard to sampling, for instance, while the number of participants was not of particular concern, the amount of data that could be sourced from each was the more pressing issue. Despite the time constraints and recommendations discussed previously in chapter three (section 3.5.1), in the spirit of additional depth and quality of the data, more time with each participant would have been preferable.

To avoid excessively long interviews, however, where the risk of leading the participants would only increase, given the elusive, and difficult to describe, nature of the phenomenon under investigation in the first place, alternative data-collection

strategies would need to be considered. But first, an additional concern permeating much of the data-analysis phase of the study, due to the deeply subjective nature of phenomenological analysis, was of additional concern at this late reflective stage. There was a constant fear, throughout the phenomenological analysis process, and in concert with Brentano's (1995) ideas on how we *notice* some things and not others, that valuable, game-changing insights contained, at some level or in some shape or form, within the participants' accounts, were somehow being consistently missed.

In light of both these issues, therefore, at this stage, alternative methodological possibilities might be entertained, should the study be repeated in the future. First, an ethnographic approach was considered, in the sense that, interviews would be based on prior observations by the interviewer. In other words, the researcher, in this case, would observe professionals at work, over an agreed period of time, throughout their engagement in actions, interactions, situations, and/or episodes. This would enable the interviewer, based on the actions observed, to use simpler probes, such as, why did you do/say that? What were you thinking at the time? What was your train of thought, if any? How did you arrive at that decision? This strategy might increase the depth and quality of the data yielded, with additional context and opportunities to *notice* what is interesting or significant. Further to the fear of failing to notice, cited earlier, additional methodological changes might include the recruitment of additional researchers throughout both the data collection and analysis phases. Provided both/all researchers are well-versed and agreed on the precise method to be employed, their individual interpretations of the same data would add richness to the findings, provide additional insight, and increase the depth and breadth of what is *noticed*.

6.5 Recommendations for future research

Based on some of the key insights surfacing throughout this chapter and the last, several additional questions continue to emerge. Here, in this final section, some of these questions are articulated in a manner that might inform future research, with a view, in line with the second research aim, to prompt a revival in research and development in OJL. Some of the main findings are summarised in brief below, as context for a series of twenty questions they are considered to raise.

The final eidetic description of on-the-job thinking portrayed a relatively simplified view of the phenomenon, with the complexities associated with volitional and affective aspects of cognitive processing imaginatively removed. Instead of conceptualising the thinking inherent to learning processes in terms of thoughts as objects with a conscious quality, or thoughts as objects with an unconscious quality, thinking as a continuous and on-going process experienced via its attendance by conscious awareness, positions the poorly understood notion of consciousness in a less central, and therefore less problematic, location, so;

- 1) *What are the implications of reorienting learning theories from a reliance on traditional cognitive theory, to a basis in a less problematic phenomenological description?*

- 2) *How might the description of on-the-job thinking as a reflection of itself, as illustrated in the interview-room analogy, provide an alternative framework for the conceptualisation of data in other studies in any way related to thinking and cognition?*

Research on self-concepts and their relationship with learning has explored their effect on motivation to learn in adults. In this study, self-concepts were depicted in a more central and affective role, as influential guides or blueprints during unfolding on-the-job episodes and situations, so;

- 3) *To what extent do self-concepts actually influence thoughts and behaviours in practical applied contexts?*

Similarly influential to unfolding OJL situations and episodes, according to the findings in this study, were feelings and feeling states, so;

- 4) *Which feelings and feeling states can be identified as particularly affective to learning-rich situations and episodes, and to what degree?*
- 5) *What is the origin, basis, and justification for such feelings and feeling states affecting OJL situations and episodes?*
- 6) *What is the link between such feelings and feelings states and the specific learning outcomes that result?*
- 7) *How might prospective interventions assist in the management of negative feelings in educational and workplace contexts?*

8) *How might approaches and techniques used in popular forms of psychotherapy (like CBT), be modified and applied in the context of OJL interventions or initiatives?*

Based on the apparent centrality of general concepts described by PFTs, thinking and reflecting tools based on the construction of more sound core, threshold and self concepts, were deemed a worthy initiative for enhancing OJL outcomes, so;

9) *How might the process of distilling existing thinking and reflecting tools be carried out with a view to facilitating their eventual validation?*

10) *Which specific guidelines might best facilitate such a distillation?*

11) *How might the notion of threshold concepts be used further in enhancing thinking and reflecting tools in various OJL contexts?*

12) *How might thinking and reflection tools be modified to accommodate both the formation of sound concepts, and the fluid and continuous nature of on-the-job thinking, to be felt in process, as opposed to being deliberately attempted?*

It has also been argued in this thesis, that the risk of undesirable learning outcomes is not exclusive to the OJL context. Given that OJL has already been considered the most important way professionals learn (Eraut, 2004; Melton, et al., 2010; De Lyon and Cushion, 2013), the development of structured approaches to maximising it represent an enticing research focus. Constructivist learning, for instance, was at least one

approach portrayed in the previous chapter as characterised by personal discovery and problem-solving, taking place in a “responsive environment” (Cooper, 1993, 16), so;

13) Which tried and tested aspects of constructivist learning could be applied in the practical context of OJL?

14) Which other tried and tested approaches in the more rigorously studied domains of learning, not necessarily limited to constructivism, can be similarly applied to the OJL context?

A re-conceptualisation of OJL as a constructivist learning environment also reveals the prospective role educators and trainers might assume in promoting and facilitating OJL, so;

15) Based on a deeper understanding of thinking in the context of OJL, what additional roles might educators and trainers assume in its on-going promotion and facilitation?

16) In the absence of on-going support, how might educators and trainers in formal preparatory programmes otherwise prepare professionals for on-going OJL throughout the career-span?

And finally, given the particular features of the final eidetic description raised in this study, and the essential nature of on-the-job thinking, as well as the wider field of OJL, elucidated therein;

- 17) *How might the interview-room analogy facilitate the discernment of more apt definitions of the thinking terms used in prevailing education and learning theories?*
- 18) *How might the interview-room analogy contribute towards the development of a wider and more robust definition of OJL itself?*
- 19) *How might a “comprehensive theory” (Raelin, 1996, 563) of OJL otherwise inform the creation of an OJL curriculum as part of formal preparatory education and training programmes?*
- 20) *How might a more comprehensive theory of OJL be incorporated into existing formal education and work-based programmes and infrastructures?*

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ANNEX 1

Disclosure of researcher positionality and reflexivity

In qualitative research, the position of the researcher introduces a range of “strategic, ethical and personal issues” into the research process (Creswell, 2014, 237). Given the interpretive nature of phenomenological analysis in particular, and the specific aspects of the research method drawing on modern forms of *interpretive* phenomenological analysis (Smith and Osborn, 2008), the position of the researcher in this study was truly central to the findings and final discussion. Despite a continued effort to bracket existing knowledge, echoes of Heidegger’s (1982) assertion that articulations of phenomena are always constructed, and are inseparable from history and context, necessarily pervade the narrative. Phenomenological reflection during the later eidetic analysis exclusively represented the primary instrument for articulating the final description of essence. It is recommended in qualitative research, that where the researcher represents a primary instrument, an identification of personal values, biases and assumptions should be outlined and clarified from the outset (Creswell, 2014, 256). A discussion of these personal beliefs, values and assumptions are therefore hereby contextualised in relation to the researcher’s background. Where the rest of the dissertation is presented in third-person perspective, this segment, with respect to its personal reflective nature, is articulated using the first-person point of view.

Prior to teaching and lecturing in physical education and sport, my career in the health and fitness industry had spanned a period of approximately 14 years. During this period I worked in a number of health and fitness facilities in Malta and London as a PFT with clients with medical conditions or specialised wants/needs, and later in various supervisory and managerial positions, still related to personal fitness training.

In these latter roles I was also involved in tutoring and assessing prospective fitness instructors and personal trainers working towards private vocational qualifications. In 2011, I settled permanently in Malta in a full-time teaching position as a physical education teacher in a state primary school, representing somewhat of a career-change. Further to my work commitments during these periods, I was a keen amateur athlete, competing in the sport of olympic weightlifting, where I had the good fortune to represent Malta in a number of international events, and to coach fellow weightlifters and athletes. I considered my sport participation, coaching, and fitness industry roles to have a strong crossover in terms of knowledge and expertise. Upon taking up a sports lecturing post at the Malta College of Arts, Science and Technology in 2012, my personal involvement in sport and the health and fitness sector gradually declined as I opted to pursue an increasingly academic-oriented pathway. My work at the College has since been based on the preparation of PFTs, exercise for health specialists, sports coaches, and physical education teachers. During my lectures and tutorials, I frequently cite anecdotes and stories from my past experiences, believing them to enrich students' learning by adding context, practicality, and authenticity. Noticing this tendency, it is evident that I tend to subjectively attribute a degree of value to my own "body" of professional experience in the health and fitness sector.

The personal fitness training sector, specifically, is typically highly competitive, inasmuch as professionals tend to normally work on a freelance basis, and earn remuneration directly proportional to the number of clients they are able to recruit and retain. A well-known health and fitness club located in an affluent area of central London frequented by "high-end" clientèle, where I spent approximately six months in a supervisory role during the final stages of my career in the sector, was a particularly

formative experience in the development of my later research interests. Between 20 and 30 highly-experienced PFTs of various nationalities paid hefty rental fees to operate in the club at any given time, constantly jostling for clients in an extremely competitive working environment. Some PFTs struggled to recruit clients and pay their monthly rent, while others were almost constantly fully-booked and earning substantial salaries. While working closely with the PFTs, observing and conversing with them on a daily basis, the general skills, qualities, or any additional factors otherwise influencing their success were extremely difficult to identify, fostering a deep bewilderment on my part. Since I was already involved in PFT education and training, I quickly found that the beliefs of newcomers to the sector about what it meant to be a good, successful, or even simply a competent practitioner, were poorly equated with the concrete realities of the working environments to which many of them aspired.

I became increasingly interested in knowing, in the absence of easily-observable commonalities between PFTs' knowledge, skills, or attributes, any common underlying mechanisms influencing their professional development. Throughout my initial readings around the topic of on-going learning in the sector-specific literature, the tacit-ness problem was clearly evident as a research problem. An important reduction was made at this juncture, from the evident problem of tacit learning, to the more specific problem of tacit thinking. Reflecting back on this critical decision concerning the overall direction of the study, I have considered some of the influences shaping my interpretations of the readings, and how my orientation towards the phenomenon of thinking in particular as an operative factor worthy of further exploration, might have been influenced in turn by prior underlying factors.

I recall the concept of reflective practice from my undergraduate studies as having been of particular interest to me, which may have been a key influential factor in later considering the way professionals think, precisely, as a worthy research focus. Reflecting further on a prospective antecedent to my interest in reflective practice, I recall the influence of my father throughout my childhood and adolescent years, which, with hindsight, appears significant to the development of my current position as a researcher. As a Maltese national, my father was always very proud of the achievements of the Maltese psychologist Edward De Bono and his ideas on lateral thinking, that have received some acclaim internationally, and would frequently paraphrase him. In very early discussions with my father as a young child, I recall realising that thinking is something that can be done in a number of different ways, and just like one's ability in sport (a special interest we shared), can be enhanced with training and practice. When he began suffering the first symptoms of early onset dementia, my family became collectively involved in searching and affecting various practical means of slowing the progression, or at least mitigating the symptoms, of his condition, including cognitive strategies to enhance memory in the performance of daily essential tasks, like mnemonics, flow-charts, and "brain-training" games of various kinds. My interest in the way people think, therefore, and ways in which it can potentially be enhanced, following some personal reflection on the matter, appears to have been reinforced by some of these emotionally-rich experiences.

The information in this section has been presented in the context of the researcher not as a detached objective observer, but as a central participant, integral and instrumental to the study and resulting thesis. The points outlined are intended to cast light on the

interpretive elements of the thesis, given the highly reflective nature of phenomenological analysis.

ANNEX 2

Consent form

An interpretive phenomenological study of thinking by professionals engaged in work-based experiential learning episodes.

I would like to thank you for considering making a contribution to this research.

The interview you are being asked to participate in is part of a study aimed at exploring how professionals 'think' surrounding formative learning experiences at work. It will last approximately one hour, and involve a discussion based on and around the following general questions;

- *Can you share any significant experiences, situations or episodes arising throughout the course of your work that are particularly memorable, and influenced you in some formative way? (These could include any single episode or series of episodes from any time during your career, which the researcher will help you to identify)*
- *If you had to list the thoughts and feelings you had during, after, or otherwise surrounding the experience/s, what would they be? Please be as honest as possible.*
- *What other factors may have influenced your thinking?*
- *What did you learn from this experience? How did it change the way you work?*

The researcher will provide assistance throughout, and probe accordingly until the required level of depth and saturation is achieved. You are encouraged to elaborate and give as much detail as possible on whatever aspects of your answers you deem important. You are free to withdraw from the interview at any time without giving a reason. In this case, any data collected will not be used in the study.

The researcher is only interested in understanding your thoughts and feelings surrounding valuable learning experiences, and will not divulge any information about you or your professional activities that is not absolutely relevant to the purposes of the study. In any case your participation is treated in the strictest of confidentiality. Your identity will be kept anonymous, and any details that may indirectly result in your identification will be omitted or changed. There are no risks posed to yourself personally or professionally as a result of your participation in this research study.

The interview will be sound recorded and transcribed, and will not be shared with anybody apart from the research supervisor, Dr Julian Beckton. If you are uncomfortable being recorded, you may request that the recording equipment be switched off at any time. The transcript will subsequently be forwarded to you for your verification and approval before it is used. All data collected in written and digital form will meanwhile be held securely on file and password-protected external hard drive respectively, under lock and key in a personal office safe. Upon completion of the study, you will be forwarded a summary report of the research findings.

The final completed study will be submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in educational research and development at the University of Lincoln in the UK. It will be used for research purposes only, as authorised by the said university. If you have any questions or concerns whatsoever, please do not hesitate to contact me. By signing below, you indicate that you have read and understood all of the above.

Thank you once again for your consideration, time and attention thus far.

Kind Regards,

Matthew Muscat

Participant Name and Signature: _____

ANNEX 3

Participant and interview summary descriptions

In the following sections, each of the participants are introduced to provide additional background and context to their insights, including details about their qualification level, area of expertise, and a very brief overview of the main points discussed in their respective interviews, as well as some of the main emerging learning outcomes they referenced. To the nearest year, the average age of the participants in the main sample was 31, with a final average of eight years experience overall.

PFT03

A 31-year-old male, PFT03's highest completed formal qualification was an EQF level-four diploma in sport. At the time of his interview, he had nine years of experience in the industry and was in his final year of an EQF level-six sports-related Bachelor's degree. He cited his main area of expertise as the preparation of competitive athletes, particularly those aiming to participate in physique or figure contests.

PFT03 described a number of learning episodes including an altercation with a gym member resulting from accusations of a private nature made in a public setting, conflicts with management arising from opposing views on exercise prescription, and challenging situations with clients who did not follow his advice or were unable to cope with the demands of their exercise programmes.

From these episodes and additional instances arising throughout the course of the interview, PFT03 explicitly cited several learning outcomes including pitfalls associated with mixing business matters with personal matters, equal importance of

being a good listener to being able to design effective exercise programmes, putting good customer service before ones' own feelings or sense of right and wrong, thinking things through instead of acting on impulse, considering the views of all parties to a given situation or issue, and designing exercise programmes that incorporate both the wants and needs of the client.

PFT04

A 27-year-old male, PFT04 had seven years of experience in the industry at the time of his interview, and with a sports-related Bachelor's degree, the highest EQF level of formal education across the sample group. His main area of expertise was "exercise referrals", involving exercise-prescription and/or supervision of higher-risk clients with health challenges, typically referred from other competent medical and health professionals.

PFT04 described a number of learning episodes including an alleged case of domestic violence by a client seeking his support, instances of friends becoming clients or vice versa, and the discontinuation of clients who were not able to sustain their exercise programmes. From these episodes as well as additional instances arising throughout the course of the interview, PFT04 explicitly cited several learning outcomes including the importance of adhering to scopes of practice, listening to clients with personal problems without explicitly advising them, and considering the singular individuality of each client when planning approaches and programmes.

PFT05

A 26-year-old male, PFT05 had six years of experience in the industry at the time of his interview. His highest completed formal qualification was an EQF level-four diploma

in sport, and was in the final year of an EQF level-six sports-related Bachelor's degree. His main area of expertise was weight-loss and lifestyle change, and the provision of holistic exercise and healthy eating programmes.

PFT05 described a number of learning episodes including reactions of clients to in depth and personal questioning during their initial consultation appointments, and being forced to refrain from carrying out various aspects of his role. Some of the directly cited learning outcomes building meaningful and deep rapport with clients, remit and scope of practice of various health-related professions, and techniques for managing overwhelming feelings of anxiety.

It was interesting to note that, following his interview, later that evening, PFT05 communicated with the interviewer stating that he had, "Needed such a deep chat," and that through his participation he felt he had "gained more than he had given". This was considered extremely encouraging by the researcher regarding the scope of the study.

PFT06

A 42-year-old female, PFT06 had 17 years of experience, which was the highest amount in the sample group. Her highest level of formal education was EQF level-three, including various vocational qualifications in gym and group fitness instruction. In terms of expertise, PFT06 insisted she did not have any preferences for particular populations or specialisations, and felt motivated and equipped to assist most clients, whatever their goals.

PFT06 described her thinking and learning predominantly related to three critical incidents with two specific clients, all involving medical emergencies and loss of

consciousness. Through these accounts she was able to provide some unique insights into her thinking during high-stakes emergency situations. Some of the learning outcomes explicitly stated by PFT06 included the importance and purpose of full and documented medical clearance from relevant competent medical professionals prior to working with clients, and other technical precautions associated with exercise prescription and supervision in the case of clients with health challenges.

PFT07

A 30-year-old male, PFT07's highest formal qualification was an (EQF) level-three vocational fitness qualification. At the time of his interview he was working towards an EQF level-four vocational diploma in personal training, and had ten years of practical experience in the industry. In terms of expertise PFT07 admitted he preferred working with male clients who had similar health and fitness goals to his own, while remaining open to clients with any goals and from any population group.

PFT07 admitted that he found it difficult to recall learning episodes upon request, which represented an interesting point of discussion in itself. He began the interview by narrating an incident he stressed was only recalled on account of its recency, and not importance. He was also reluctant to clearly define distinctive learning outcomes, instead stressing the highly fluid and flexible nature of learning as a process, not reducible to relatively static and delineated outcome-based statements. Being an expectant father, the change in his thinking he attributed to this status was also discussed, particularly with regards to his interactions with female clients. These various elements transpired to prompt an astonishing level of depth in PFT07's interview, the transcript of which (included in Annex 5), eventually provided several of the key quotes and keywords presented in the final narrative.

PFT08

A 26-year-old male, PFT08 had seven years of experience in the personal fitness training industry at the time of his interview. His highest completed formal qualification was an EQF level-four diploma in sport. While he had begun reading an EQF level-six Bachelor's degree in sports science, he had chosen to discontinue this, and instead focus on launching his personal training career. He defined his expertise according to the goals of the majority of his clients, which happened to be weight-loss. He also specified that he enjoyed working with athletes.

PFT08 described a number of candid episodes including some awkward and amusing incidents with various female gym members and clients, as well as the challenges he faced with a particular client who would question many of his decisions. The principal learning outcomes cited by PFT08 were based on the development of effective interpersonal skills, particularly in terms of motivating the client. At a certain point, PFT08 admitted that the nature of the questions, prompts and probes did not conform to his prior expectations of the interview, indicating some mild discomfort with the level of depth sought by the interviewer. He nonetheless retained his willingness and enthusiasm to continue.

PFT09

A 35-year-old female, PFT09's highest completed formal qualification was an (EQF) level-three vocational qualification in fitness instruction. At the time of her interview, she was in the process of completing an EQF level-four vocational qualification in personal training, and had accrued four years of experience in the industry. Based on her interest in physique and figure competitions, PFT09 cited muscle growth as her

main area of interest, while her practical expertise lay predominantly in the provision of group exercise sessions.

PFT09 discussed various clients who had impressed her with their determination, including a client recovering from cancer, another diagnosed with fibromyalgia, as well as an overweight client who had to overcome her shyness in order to commit to her programme. She also described her own prior struggles with alcoholism, and her experiences with assisting clients afflicted with the same habit. PFT09 also discussed misconceptions among female clients about use of free-weights and their fears of developing excessive bulk. Willpower and motivation were strong themes throughout her interview, and the principal learning outcome explicitly cited by PFT09 was the importance of acknowledging that absolutely anybody can participate in a more active lifestyle, so long as they want to, and are motivated to do so.

PFT10

A 26-year-old female, PFT10 had six years of experience in the personal fitness training industry at the time of the interview, with a strong background in the performing arts. Her highest completed formal qualification was an EQF level-four diploma in sport, with additional certification in movement and dance-based fitness activities. In terms of expertise, PFT10 stated that the majority of her clients aimed to lose weight. Some of the episodes she described included her experiences with a particularly challenging client, and her transition to operating in a renowned high-end personal training studio.

PFT10 was able to discuss her thoughts and feelings at a particularly substantial level of depth, offering some valuable insights and contributions to the final narrative. The main

learning outcomes explicitly cited by PFT10 were related to the management of feelings, and the importance of resolving challenging situations as speedily as possible so as to avoid persistent negative feelings that may otherwise result. PFT10 exhibited a reluctance to end the interview, stating that she found the experience helpful in gaining a deeper understanding of herself.

PFT11

A 39-year-old female, PFT11 was a yoga specialist with five years of experience as a PFT. Her highest completed formal qualification was an EQF level-four vocational qualification in personal training, with a strong background as a professional dancer underpinning her career in fitness. PFT11 exhibited substantial knowledge and practical experience of mindfulness, which was based on her yoga practice. These unique insights enabled her to share a detailed exposition of her thoughts.

Like PFT07, she admitted that she found it difficult to recall specific episodes on request, with mindfulness itself representing the primary point of departure for the discussion. She later incidentally recalled what she considered to be a learning episode based on her experiences of teaching during her pregnancy. Unable to demonstrate the poses herself, PFT11 described her development of increased sensitivity and communication skills during this time, competences she also explicitly cited as the main learning outcomes.

PFT12

A 23-year-old male, PFT12 was recruited as a replacement for an originally selected participant with whom interviews were repeatedly postponed. At the time of the interview, PFT12 had four years of experience in the industry. Nevertheless, the

insights gained from his interview later transpired to be quite substantial. Indeed, the delays preceding this final interview afforded the interviewer time to reflect on some of the themes already presented by the previous nine participants. This permitted the use of various additional prompts and probes to which PFT12 responded adeptly. This interview also yielded some key elements of the final narrative.

In terms of area of expertise, PFT12 cited body and lifestyle transformation as his specialisation, based on a background in bodybuilding and physique competition. While his highest formal qualification was an EQF level-four diploma in sport, he was in the process of contemplating reading an EQF level-six Bachelor's degree in exercise for health or sport.

The main episode initiating the interview involved the use of a particular motivational strategy that could have back-fired, but later resulted in a high degree of success. The principal learning outcomes cited by PFT12 were related to motivational skills and their importance. Throughout the course of the interview he was able to provide compelling insights regarding systems, thought processes, and his overall experience of thinking. Following his interview, PFT12 stated that he had thoroughly enjoyed the interview, and that he had never previously thought about some of the topics he had just discussed in substantial depth.

ANNEX 4

Original interview schedule, prompts and probes

Can you describe, in as much detail as possible, any significant experiences, situations or episodes arising throughout the course of your work, that are particularly memorable, and influenced you in some formative way?

Can you describe what you were thinking? What went on in your mind during this experience?

What about afterwards?

What about before? Did you have any thoughts or feelings about the type of situation or client before this episode?

Were there any specific questions you asked yourself?

Was there a train of thought, and if so, can you describe it?

How did those thoughts present themselves to you? In what form? What did they look, hear, or feel like?

If you had to list the thoughts and feelings you had during and after the experience, what would they be? Please be as honest as possible.

Why did you act in that way?

Why did you think that?

Why did you feel that way?

What did you learn from this experience? How did the experience change the way you work?

ANNEX 5

Sample interview transcript

An interpretive phenomenological study of thinking by professionals engaged in work-based experiential learning episodes.

Interview PFT07
26th February 2017, 0830hrs - 1000hrs
Manuel Island, Gzira

Participant: *IDENTITY WITHHELD* (AA)
Interviewer: Matthew Muscat (MM)

- START OF TRANSCRIPT -

MM: How old are you?

AA: 30-years-old

MM: How many years have you been involved in personal training.

AA: Six, at least, since I'm here (in Malta), and maybe about four years back home (in Bulgaria)

MM: How would you describe your, career in personal training so far, in three to four minutes?

AA: I started as a part-time gym instructor and I used to do that as an addition to my actual job. I used to do it for just four or five hours per day. Helping around people in the gym, showing them the proper execution of exercises and helping the owner of the gym. Then pretty much when I started the first gym in Malta it was the same stuff as well, gym instructor part-time. Then I had few months, very short experience, in a personal training gym which was just personal training personal training, which I **wasn't really happy with the way things were done there so it was a very short experience. Still it taught me about personal training, but I wasn't really happy with the philosophy of the company, and then since then I've been combining gym instructor and personal trainer as a full-time job. At the moment I'm quite happy with the level I'm at. I've been learning from day one until today I've been learning more and more, and I'm quite happy and quite confident with the standard I have at this particular moment.** Even with clientele I was telling my partner in life the other day, **even with clientele I'm so happy with the level I have now**, it took so many years to build it up, it's ironic that just in a few months time I'm planning to shift to a different career path.

MM: Do you consider yourself to have any specialisation? Is there a particular type of client you like to work with?

AA: **They've asked me as a matter of fact Thursday last week once of the gym instructors that I speak quite often to in the gym where I do most of my training. She said, "Ah I see you're training girls now as well, I see you're training women."**

Because she was, “Four years I've seen you training men.” I didn't even realise this but we spoke about it, I thought about it.

I'm actually feeling more comfortable training men with similar goals to mine, similar body composition, similar even experience to mine. I guess it's just natural, these who are closest to me, my goals and my way of training, these I find them the easiest.

In general I prefer, I've discovered this recently, I prefer training males. I'm much more confident and I feel much more like I can really squeeze the most out of them, I can really push them to the limit. I know where is that limit while with females for me it's a little bit more of a guess. I tend to take it a little bit easier with females. Certainly females I mean there are females I've been training for years and years, I never take it easy on them any more but in general it takes a bit more of consideration and a bit more worrying from my side when I train a female. While with males I can really push and you know, let them get the most of it for the money they pay for the training.

MM: How would you describe the role of a personal trainer? If someone asked you what you do for a living, what would you say?

AA: Well, different personal trainers see their role in the gym and see what their duties are in a different way, I've realised this.

But the way I see myself,

the main thing is, I teach people how to, or I try to teach people how to train and how to move, basic training principles, basic compound movements, how should they be executed properly,

not in a way, “This is how you should squat! There is one way to do the squat!” (puts on bossy voice) but rather according to people's leverages and sizes and what are the best ways to move and what are the safest ways to move. That's the main thing I see. Everything else for me just follows. Meaning, it's just in the background, just follows the main idea. If I teach them to follow basic principles, even when it comes even to nutrition and moving and training, everything else just fits in like a chain reaction. That's how I see it.

MM: I asked you to think of an episode from your past which you learned something from and you told me you did manage to think of something. So can you describe it to me?

AA: Yes of course. I tend to forget things form the past even when you ask me how long you've been doing this for, it's really hard for me to give you a frame like I've been doing form April 2000, it's really hard so even past experiences I don't really... I store them somewhere and when we start a conversation about a certain subject or certain event, then it triggers, it clicks, but I tend to really keep them, you know, at... how should I explain, I don't really try to remember them.

So the interesting story I could recall is something which just happened last week and it wasn't really a super interesting story, it's just something different, so I thought there might be something interesting in it for you. The situation was basically, I am training two girls at the age of 17. **Very knowledgeable, very intelligent. Actually they gave me hope for the newer generation. Very intelligent, very driven.** They had some experience in training before, one of them dances, does a lot of different types of dances and classes. The other does volleyball. They're quite, I won't really say athletic but they're quite coordinated, I mean they move, most of the movement are proper movements, they move properly. They don't lack coordination. And while training, I did super-sets for them, while one of them is doing one of the exercises which requires less of my attention, something simple like planks or leg presses, the other one is doing the complex compound lift, be it deadlifts or kettlebell swings, so I'm with the one who is doing the complicated lift and I'm you know, making sure that she is doing it properly. And while I'm, it was a kettle bell swing, one of the girls is swinging and I'm with her, **I see one of the bodybuilders in the gym, one of the biggest and most, you know, with highest self-esteem guys in the gym, he goes and he starts chatting up with her, OK? And I didn't say anything I actually found it funny.** As soon as I went to swap, you know for both girls to change position, change exercises, **he started like, trying to excuse himself, "No I'm trying to motivate her..."** and stuff like this, I didn't really... usually in training I don't really... **I try not to chat up with other people because it's a limited amount of time, people pay for that amount of time, they don't pay for me to chat up with other people so I kind of really didn't want to extend the situation there.** We swap. The other girl, so the one who was chatted to already, I'm swinging next to her, **and the other girl goes doing leg press and someone else goes and starts chatting with her, and I'm like, I'm thinking to myself, "Oh my God!"**

Maybe in relation to me going to be a father of a girl not far from now, but I was like, "Oh My God these girls are here to train, and how hard it is on them to actually really do training and... OK they are with the trainer so I, you know I kind of chase the guys away and I let them train and I let them concentrate. But imagine how hard it is on them to go to a gym as a normal gym member and really learn how to do a proper training and do a proper training. **I mean there are so many other things for them there,** which is like... maybe again because I'm going to be the father of a girl I'm seeing things in a different... (laughs)

MM: So you never thought about this before?

AA: No not really. I mean I never really... before **I realised I'm going to be a father of a girl, I never really thought so much of gender differences.**

I mean for me, really, people are people, really I never thought of that.

And now I'm much more aware of this. Much more aware. And one of the girls I know her parents. They signed her to train with me because I know them, they've seen me training for years. And I'm like, Oh my God her parents have sent her here to train and you know, and how many other things are there... how many things that can take her mind off training are here? It's just insane, it's very very hard for them to stay on...

MM: So that moment where you suddenly said, “Oh my God there are all these other things that they have to deal with...” When did that happen? When you saw the second guy talking to her?

AA: Well it was the second guy, because **the first guy was a bit of a, you know a bit of a macho guy a bit of a, you know, a high self-esteem and show-off type of guy, and the first girl was much more... attractive than the second girl.**

So I figured, alright, I guess this is how... I guess this is normal for her, you know? I guess this is how it happens.

But then when it happened to the second girl as well it was like... a different type of guy and it was a different type of girl, and I just figured... just as long as you're a girl... (laughs) there will be a guy in the gym trying to bug you while training, or a few guys in the gym... you know she's literally doing leg press, she's in the middle of her set, and they go and chat her up. I mean if someone did this to me it would really annoy me, while I'm doing my set, I mean... there are guys who have done this to me as well, even when I'm doing my exercise I move from one machine or one exercise to another and they keep on following me and talking to me and it's really annoying.

I, as a guy, and as the way I am, I tell them to bugger off, but how much more different and more intimidating it must be for a girl going as a normal gym for training knowing as little as she knows, trying to train and tighten certain areas, whatever, they always want to tighten the tummy, and... how much harder it must be on them to really stay on track and avoid all this...

and even when they get advice for training and stuff, who gives you the advice and if it's really worth following and how tough it is on them to really really train properly?

MM: OK so you're saying a lot here and asking yourself a lot of questions here. Has this happened since that moment, have you continued to think about it?

AA: Well I guess I did up to a certain extent. **I didn't really obsess myself with it, but I guess did actually think after that yes. I didn't make certain evaluation at the time, and then when I finished the training I went back to it and said, “Hmm, what happened here?”**

MM: Why did you come back to it? Did you sit down and say OK now I'm going to think about it? Or did it come to you while you were driving home, or afterwards?

AA: I don't really know. It was part of both pretty much. **It's like, you don't really tell yourself what to think of, no it's very few people who tell themselves what to think of, you know, and they can direct their...**

MM: How do you know that?

AA: From a friend of mine, I've heard it... (laughs)

Well, how do I know this... it's common sense.

MM: Is it?

AA: **I believe it is. I believe it is... maybe I'm wrong.**

MM: So before you said, "Maybe it's because I'm going to be a father..." Has that changed the way you see things?

AA: Yes definitely.

MM: How do you think that happens? How is it affecting you?

AA: It's very easy to say you're perspective changes. **Your idea and your point of view changes, and that's pretty much what happens.** But then, what does this really mean? **I believe you start seeing and evaluating things which you didn't really acknowledge before, or you didn't really give much value to. I believe that's what it is. Because your point of view changes straight away, so you see things in a different way straight.** I'm not sure if it makes sense.

MM: So when you're training these two girls, are you thinking about how their parents must feel? Or are you seeing them and imagining them to be your daughter? How are you incorporating those ideas?

AA: **The way I see them is, these girls are someone's daughter.** That's how I see them, and it's like... I'm telling you again, they really really... **maybe I'm being a bit over-protective about them and a bit over-concerned, because I really liked them straight away.** Not physical, but **how knowledgeable they are, how determined they are, how I got to know... I already knew about one of them quite a lot but I got to know about the other one as well, that she has a brother with Down's syndrome and I got to know about them quite a lot actually, and they impressed me, I really liked them, the impressed me in a really good way. They actually changed my idea of nowadays' 17 year-olds, that's how much they impressed me.**

MM: You say that they are knowledgeable and determined and that that's something good. Why is that something good for you inasmuch as you felt the need to over-protect them due to it?

AA: I'm not saying I was over-protective I said I might have been. But maybe that's why I'm a bit more aware of seeing things happening to them. **But these are big values for me, not just when it comes to training and for you to really achieve your goal in training and for you to really progress in training and not spend four years or five years or whatever period of time in the gym wasting your time and not getting actual improvement or results, for me this is a must if you want to improve and go somewhere, to be disciplined in what you're doing, to be determined, and to be knowledgeable.** Nowadays we have no excuses about not getting...

MM: The fact that you value these things so highly, where do you think that came from?

AA: Suppose everything comes from the childhood, according to... (laughs) some big names. But... I don't know... it's a mixture... it's how I'm brought up, what I have built up as values myself while growing up.

MM: And how do you think you built them up?

AA: Well, I always used to, from a very young age, as far as I can remember, I always used to observe a lot and try to learn a lot, meaning I wasn't always looking for a good example, someone I need to copy or follow, I mean there were these as well. But I used to learn a lot, I'm very happy I used to learn a lot from bad examples as well, meaning I see something, some type of behaviour or some act which I consider is not good or it's, you know, it's bad or harmful... and I try to avoid those.

I see good examples and good behaviour and proper, if I can use the word, behaviour and I try to learn the method, the ways behind that behaviour... but... it's a mixture... how did I start valuing these? It's a mixture of what you've seen while you were building up your values.

MM: And how do you know if something is good or bad?

AA: Yes, well. That's a good question. According to my own compass.

MM: Your compass?

AA: Yes.

MM: Tell me about this compass.

AA: Well I believe everyone has one of these. It's affected by, you know, the values society has, the values the family has, if there was a family. It's affected by experiences. It's affected by social circles, and it's a bit like basal metabolic rate, right? A lot of trainers like to say, "We will speed up your metabolism..." as if metabolism is one thing. Metabolism and metabolic rate is a whole bloody ... you know... it's not one thing, one creature, it's a combination of so many events and so many processes, and this is pretty much it. The compass is not one thing it's not one object, it's a unification of so many processes.

MM: And this image of a compass, do you see it that way?

AA: No not really I just said it as a word. I don't really have an image of a compass.

MM: Why did you use the word compass then?

AA: I'm trying to get as close as what I need ...

MM: Did you think about that now, or have you thought about it before, this idea of a compass?

AA: Well it's a saying that we do use in my language (Bulgarian) and I'm trying to... I'm not sure if it's an actual...

MM: So it's like a "moral compass"?

AA: Yes. I'm not sure if it's an actual saying in English, but we do use it in Bulgarian and for me it makes a lot of sense.

MM: So you don't see the image of a compass but you do feel there is a general direction that these processes point us in...

AA: I don't see a general image of compass no, because as I told you it's not... a compass is just a word I use but it's not one object, it's... **I don't really see it as one object no. I don't really see all those things as an image, because they are all different individual things which, together they point you in certain situations towards a certain ...**

MM: So when you carry out an act you are aware that some kind of compass took you there? So you do things that feel right because this compass took you there, without necessarily knowing all the processes that got you there?

AA: Well, yes because they are complicated processes. **I might be aware of some of them, but I will never be aware of others.**

MM: Before you said that some big names say that many things can be related back to childhood. Is this an interest you have, this field of psychology?

AA: **I do but it's not as it used to be. I used to be very very interested in the area.** I'm still interested but with time **I kind of shifted my focus instead of learning and reading about different opinions of different professionals and different theories, and just started knowing more from my personal observations and my personal experience.** But I've always been interested in that area yes.

MM: So in the case of personal experience you're using your compass and this sense of what is right and wrong...

AA: What's right and what's wrong yes but I don't really want to limit it in that sense because what is right for you is not necessarily wrong for me or right for me, so I don't really... it's not like a limitation like I'm doing this because it's right, I mean it's not like a really narrow path where this is right and this is bad because of what mum told me or because of what society told me. It's more like with right and wrong yes, but with a bit more neutral view on it, I mean not like an emotional this is right and this is wrong. You have to wear this because this is right. No it's... I don't know, better and worse as opposed to right and wrong.

MM: You mentioned it's not an emotional thing, so how do you see emotions? What are emotions for you?

AA: Well, there aren't much of emotions in personal training. **I mean, you're trying to stimulate the client, motivate the client, but there are emotions on that end but on**

my end there aren't much emotions because I'm not there to get emotionally attached or whatever so... on the other hand yes there are emotions because there is hatred at times pointed towards the trainer... (laughs) swearing and stuff... and suffering (laughs) **So they have to deal with these emotions.** At moments they reach training and they have to go above it the moments you show them a new movement, and you can see straight away, "Oh no you want me to do kettlebell swings with 12kgs?! Until now I thought kettlebell swings were this small 4kg things at the gym..." **So there are a lot of emotions on the other end but if I really,** "Oh OK it's heavy for you so don't do it..." **If I really get emotional... there are moments when it's really for you, OK let's decrease the weight but it's like,** "OK you're afraid of it, OK leave it then, we'll never do this again. You don't feel comfortable? This we won't do it..."

MM: So you don't base your decisions on emotions so what do you base them on?

AA: Well, experience. I try to guess but then again, **it's an educated guess and trying to judge them on performance and their abilities, on their advantages and disadvantages, on what they have to improve in no matter how basic it sounds, in posture, in movement. I base it on this, and with the goal we have already set in the beginning.** **My goal is to be more capable to move, to do more exercise. I don't want to be like, limited and restricted in my movement** in my exercise so if this is your goal we will do toes to bar, we will do kettlebell swing, we will do front squat and we will do thrusters. **If your goal is to lose weight I won't make you do thrusters necessarily, I might but I might not. I might get to it I might never get to it. It's according to their goal, it's according to their level and where they want to be. That's it. Emotions are for them to deal with and if I can help them with that, that's brilliant, but as far as I believe I'm far from emotional in my training.**

I mean I'm not really emotional in my own training. I'm happy when I improve and I'm really not happy when my performance declines but that's it, I know I keep on training and I know I'll get better and better. Not necessarily lifting heavier but I can keep on getting better and remain healthy so I'm not really emotionally involved in my own training let alone when I train someone, it's even less.

MM: OK let's go back to the bodybuilder who was hassling your client. You said that he is one of the people with the highest self-esteem, macho, shows off. How do you know all these things? How did you come to this opinion about him?

AA: **It's body language. It's even the way he expresses himself, the way he talks.**

MM: The words he uses? Or the tone he uses?

AA: **All of it. It's verbal communication.**

MM: So you've spoken to him before?

AA: **Yes, yes, I don't mind the guy, I just giving this as an observation. I do like the guy, but I see him as the guy he is. I don't mind him, I mean I would actually be surprised if he didn't approach the client.**

MM: So it's something you would have expected him to do?

AA: Definitely. Yes. **It's not just an expectation because I've seen him approach other females at the gym, so I was pretty certain... I assumed in advance... although I don't like assuming, it's like again, an educated guess, you can put it as an educated guess that he would actually, yes, approach her at one stage or another.**

MM: So you weren't surprised as such, but the episode still stood out in your mind even though you expected it?

AA: **No I wasn't surprised. I wasn't annoyed. I expected it from his side. I don't want to say this because it's not really right, but I kind of figured him out in my mind. I mean you never know who is in front of you or against you, fully, but basically I had a drawing of him in my mind, I know what a creature I have in front of me. I believe what made me think about it is because I see the other side much more than before,** the female side, and this is really related to me expecting a girl. I actually gave it so much attention because it made me think of the other side much more than I would ever think before. **Just a few months ago I never would have considered it, going so deep into how is the female feeling at the gym, honestly I went into so much depth because of changes in my own life that's what I think.**

MM: So having a daughter of your now causes you to give importance to what a woman but be feeling or thinking...

AA: I didn't really know about it. **Even now when I see, you know, my partner going through pregnancy and everything it's...** it's such a... it's a complicated thing. **Until now I always took it for granted. And now I actually see the changes. I've had pre-natal and post-natal trainees before but I never saw it first-hand and it's like, yes, massive changes, physically and mentally they are massive changes, and that's the woman. Then there is the female growing up. I just started seeing a bit more the female or the feminine side. And don't get me wrong when I say he is macho or something, I don't see it in a bad way. I need to be seen as a macho sometimes as well... (laughs) I don't see it as a bad thing. It's just the type of character that I see. It's not a good or a bad thing on it's own. In combination with other things it could be very good or very bad,** for different purposes it could be very good or very bad. So don't tick it there as a... (laughs) I say it just as an observation.

MM: You said that sometimes you want to be seen as a macho as well, can you tell me more about that?

AA: Not a particular situation but...

MM: Why do you want to be seen as macho?

AA: **Not all the time. I mean it's not a standard in life, we're not at war, we're not in the woods...** I say it very generally and the answer I'm going to give you is going to be very general as well. I don't know if it actually answers your question. **In different situations you can be, and I believe you should be, much more gentle and much more understanding, and much more aware of people. And then in other**

situations you have to be much more self-driven, and much more masculine, and much more... instead of evaluating others, suppressing others in a way, or overcoming others, or putting yourself first. And so this is what I call a bit more of a macho generalised behaviour.

And different situations require a different response. It's not just black and white, you can't be, "Oh I want to be in contact with my feminine side..." Sometimes it's needed but sometimes it's needed to be more contact with your male and masculine side.

MM: When you say masculine, what image are you getting in your mind?

AA: More reliable as a male. **More masculine, more reliable. More... laid back in a sense, not necessarily relaxed but, like... more observant, like with a brighter view on the situation, more capable to make a decision, more capable in a situation to evaluate as many factors as possible, more capable to react, fast and proper, and not really emotional.**

MM: Where do you think this definition came from?

AA: **It's the society. The idea, you know. Where I come from males are quite dominant, and the society is a little bit different from society here.**

Here females I find them much more stronger character-wise and mentally even, I find them much stronger than back home.

They have even bigger responses in the couple much more. The way I see it from my humble experience, it has a much bigger part for the female in the couple here, when I observe the natives here. Back home the female has much smaller part in the couple. The male is much more dominant, so it is... I see that image of the society.

MM: So do you find yourself comparing things here to there?

AA: **All the time. Not just here, but back home in general, I always did, that's one of the best ways to learn, comparing, comparing new to... I mean we've been doing this for millions of years, comparing new to old, comparing something we know to something we don't know even this is how we approach people, it's not just a theory, it's proven,**

it's how we approach people. Why a lot of Western Europe are afraid of the refugees now? I know it's away from the subject but why are they afraid of them, why do they see them as a threat? Because it's something you don't know about, it's something you have a blurred image of and it's... you compare.

You know your neighbour who is much closer to you, much similar to you, and you don't know this one who is different, who is in your eyes much less reliable, who is much less civilised in your eyes. We compare, we do compare all the time.

I'm happy with my comparisons I believe they do me more good than harm. I compare a lot, people, training methods, training techniques, everything.

MM: How do these comparisons happen? Are they triggered by something or do you sit down and say OK now I'm going to compare this with that and see what I can come up with?

AA: Both. **They are part of my mental processes during the day.** Part of my, you know, **part of the things I evaluate on my own. Part of my internal conversation, they happen. Sometimes they just happen like something impressed me or God knows on what level, and it comes back to me and sometimes something really impressed me and I, "OK let's see what happened here, why did this happen?" And I try to explain to myself... see if it's safe to go outside of the cave or no... (laughs)**

MM: Tell me about this internal conversation. Can you tell me about that?

AA: **Well that's part of my compass now if you're going to... because you were very interested in my internal compass... it's part of it. That's one of the processes in it.**

MM: Can you tell me how an internal conversation normally goes?

AA: **Well we don't argue usually if that's what you're trying to get out of me... (laughs)**

Well, that's very personal and I really hope you're not... that you really finding this interesting and you're not just asking me... it's very personal.

I believe everyone who is a bit more... you don't have to be spiritual or whatever, you have to be just a bit more... aware, pretty much. I believe everyone who is a bit more aware has this internal conversation going on.

I know there are people who don't even... they rush so much that they don't even stop and think about what happened to them, about what happened, why it happened, where am I going? I know there are so many people like this, very primal, very rushed.

MM: So why do you do it and they don't? How did you develop this?

AA: **For me it's important. For me it's part of being...**

MM: Where did it come from?

AA: **I've had it from a very young age. It came from my childhood. Very young age. Evaluating people's behaviour, why they do this, why they are affecting other people in that way, you know stuff like this. From a very young age I've been observing adults.**

MM: And why do you think there are other people who can't do this? What's the difference between them and you?

AA: Well, again I assume. **You never know what is happening inside a persons mind. Again I assume, it's a theory of mine. I get to that conclusion from seeing people's reactions, so I get to that conclusion by observing their reactions and their actions.** Where I come from it is very common to have... here people are a bit more distant. **It's difficult to have a really open conversation with a relative or with a friend. Here it is a little bit... even with friends and relatives you're not that... it's very rare to have an open and honest conversation. I've heard this from people... people have shared this with me.**

How do I know they don't actually have internal conversation? Because they have told me. I've gotten to know this from their own words. And on top of that I observe there reactions and actions, and I make my conclusions.

MM: And this internal conversation, is there some kind of a system. Are there specific questions you ask yourself? Are there specific times when you sit down and say OK now I'm going to have an internal conversation now?

AA: **No it's a bit like a guiding voice. No matter how funny it sounds it's a bit like a guiding voice.**

MM: So you just hear it sometimes?

AA: Yes sometimes I have a conversation with an intelligent voice in my head... (smiles)

MM: OK you're smiling again. You also smiled before when I asked you about the internal conversation and you replied, "well we don't argue with each other..." and you smiled, so what are you thinking there? And why did you feel the need to tell me that?

AA: (Laughs) Because there is a joke... you know, if you talk to yourself too often or too much it's not a good sign, and people sometimes argue about it... it's not bad... but **it's really bad when you start arguing with each other, and when you get angry with each other and don't talk to each other for days... (laughs) Then it's really bad...**

MM: Is this a Bulgarian joke?

AA: No it's kind of a "my" joke. And I joke with people about it. We have a kind of similar thing in Bulgaria and I have modified it myself.

MM: So do you have an idea that this kind of process could become unhealthy? Or dangerous?

AA: No there are conditions, and I'm certainly hoping I am far from this state. But there are conditions where this is really... it's not a healthy process, no. There are people suffering from these conditions.

MM: The way you use it you consider it to be healthy, but you have this idea that if you do it too much then it's unhealthy?

AA: No it's not that if I do it too much, it's really...

MM: Can you tell me more about this distinction then, between healthy internal conversation and some sort of mental illness?

AA: OK, **well... through times and periods of my life when I've been away on my own and when I haven't... when I really had to abandon my social circle and go somewhere for a period of time and do something, there have been periods when I have spent quite a lot of time on my own. And at these moments you become much more aware of yourself.**

You become much more observant of others, and you... since there is the absence of other people you become a bit like Tom Hanks with... you know, what was the name of the movie?

MM: Castaway?

AA: Castaway exactly.

MM: Wilson?

AA: Wilson yes, that's a different thing actually you point at an object to talk to, **but he was talking to himself, he was talking to his mind as well.**

MM: Again you are smiling. Is there something wrong with that?

AA: **No I love Wilson. I'm smiling because it's one of my favourite movies and in general I really like Tom Hanks as well. He's one of the few actors who speaks the Bulgarian language, and he has been quite a few time in Bulgaria as well, and I really like the guy and I really like his movies as well, so... that's why I'm smiling. It's a bit of emotion as well, forgive me.**

MM: So is there some kind of a line that you cross and then it becomes unhealthy?

AA: Yes definitely.

MM: At what point does it become unhealthy?

AA: **I have no idea I hope I will never get to know at what point it becomes unhealthy.**

MM: So how do you ensure you keep it healthy?

AA: **I don't really have to control it. I believe people who are unhealthy and have mental issues, they have to try to control it. I mean for me it's part of who I am, it's part of a healthy human being, so I don't really have to control it,**

it's... it's part of me really, and there have been situations when, there is no one to give me advice or to tell me what and how. And there is this internal voice

that will tell me... I hope I'm not sounding crazy... which would tell me... OK let's say in a situation... "OK calm down, wait a bit, you might not be right..." or "Wait, let's see what else there is, it might not be as you think it is..." and it's really, for me not something I have to control.

It is part of me and I'm very proud and very happy that I actually have this internal conversation.

There have been times when I have been feeling down, or I've been feeling stressed or overwhelmed, or I've passed through some difficulties in life like everyone in this world, and there have been moments when I have lost that internal connection, and I feel like something is missing. I feel like something is missing and how do I know that I am composed?

And how do I know that I am back to my senses, and how do I know that I have passed through a tough moment? How do I feel myself again after a tough episode? When I actually have that internal conversation, that internal peace, I can really call it internal peace.

MM: So it leaves when you're stressed?

AA: Yes, well... **when I am stressed or overwhelmed.** These are just few times in life that it happens. **Either something that is changing your life for a long period of time or something that is overwhelming you in the sense you cannot cope with. It could be job, it could be relationship, it could be just an issue which arose which is not going to affect you in the long term but it is quite demanding on you for this particular moment or time being, and it just over-stresses you and overwhelms you in a certain way. I cannot really explain it any better than this.**

MM: You said again, I hope you don't think I'm crazy. Why would that be a bad thing? Why do you care about that?

AA: (Laughs) It's not a healthy thing. **I mean we are all more or less crazy, that is a fact. And in the world nowadays you have to be a little bit crazy otherwise other people will drive you mad, insane, that's for sure.** But I don't think it's a bad thing. **I'm very happy I have the self-belief that I'm a little bit old, I'm a little bit different from the mass, I know a lot of us have that thing and they think that they are better than the average, I really believe that I am. I believe through the things that I've done in my life so far, I have proven it up to a certain extent as well. I believe.**

If you ask someone else maybe they won't agree with what I'm saying about myself,

but I don't see it as a bad thing, I just see it as an unhealthy thing. For me being crazy, or being mad, is not a bad thing. Sometimes people you know, they look at autistic children and they think they are crazy and they are not 100% and sometimes autistic children are ingenuous, so I don't see it as a bad thing.

MM: So why wouldn't you want me to think you're crazy then?

AA: **I don't see it as a bad thing but I see it as an unhealthy thing.** So I don't want to be unhealthy. **I believe the best way to live your life is to stay close to nature, to be aware of your own body, to be aware of your own mental and physical health. I believe that is the best way to live your life.** Because we just have a limited amount of time, and by what you are doing, and how you are doing it, it really changes the quality of that limited amount of time you are going to live through. **So if you are unhealthy, if you don't take care of your own mental and physical health, then you won't make the most of life in general.** So I don't see it as a bad thing, I see it as an unhealthy thing, and another thing why I said I hope you don't think I am crazy is because, again I hope I am not out of subject but **I am going into some quite personal and deep thoughts which,** you know I hope I'm not scaring you in a way with those thoughts of mine.

MM: Why do you think they would scare me?

AA: **I don't know, I hope it won't** because **I don't see usually people talking and discussing such things in such depth.**

So everything that is out of the box and out of the ordinary tends to scare off a lot of people. I'm not saying it is going to scare you in particular, but it tends to scare the mass. So that's why I am saying it in advance. I wouldn't say it just to you, I'm saying it... well I wouldn't say all this to just anyone as well, but I would say it to whoever is in front of me I would say the same thing not just because you're there I hope you won't think I'm crazy, I would say it to anyone who is listening to what I'm saying in that direction.

MM: You said something in the very beginning, you said you've got episodes in your past, but you don't think about them. You acknowledge that they are there, so even though you don't think about them do you think that they affect your behaviour and your decisions?

AA: **Of course. I don't think about them on an everyday basis but they reflect on what you're doing and how you're doing it. And you recall them as well, it's the way the brain functions.**

MM: Recall them when you need them you mean?

AA: **If the brain functions properly, yes. Because it could be that you cannot recall them as well, but if the brain functions properly, yes.**

MM: If the brain is "healthy"?

AA: Yes.

MM: OK so this episode that you did mention, with the two girls, what did you learn from that? And how will it change the way you work.

AA: **I don't really know what I learned from it to tell you the truth.**

I guess I can point out a few of the things I think I learned from it, and if you ask me two months later I might add something to that list, if you ask me five years later I might add something else to that list.

MM: Referring to the same episode?

AA: Yes.

MM: So you are thinking about what you might have learned right now. So you didn't consciously think before about what you learned from this episode? Is that correct?

AA: I believe yes. **What I learned from this episode is mostly what we already spoke about. It's not something particular thought. It's my awareness of my female in the gym which has increased.** I have become more aware of that, how the female is at the gym. **I didn't really learn something particular like, "I have to..." or "If I don't want them to be disturbed during training I have to programme the exercises close to each other so I stay next to both of them..."** I mean I'm not ...

MM: So you learned something about yourself then?

AA: From that particular episode yes. Because I mean it's not bad for the training, it wasn't harmful or something, **they're not there just to listen to my commands and just do what I tell them and in one hour cool down and stretch and go. They will be interacting with other people, they will learn their own things from interactions with other people, they will go through their own experiences and lessons and stuff,** but I didn't really think after that, **I have to change this in my training, because that was not an issue. I mean, I am totally cool with this, I just made an observation.**

MM: Do you think it will change something though? Do you think it will affect the way you work in any way from now on?

AA: **I don't think so no because it's not something I see as bad thing.** If it was a bad thing, like... I don't know...

MM: OK let's say one year from now you have a female client, who is similar sort of age to these girls, let's say she's quite attractive but you are thinking more about your daughter when you look at her, do you think that you will treat her differently as a client than the way you would have treated her, say, two years ago?

AA: I guess so yes. I guess I'll treat her even better. **I guess in the future I will be even better as a person and I will be even better as a professional** and I will treat her even better.

MM: So you have learned from this episode in the sense that as a result of this episode you now know that you should be more understanding of certain types of female clients, who perhaps before you weren't quite so understanding of. So it probably would come out even though you've just told me you can't really think what you've learned. Would you agree with this?

AA: Well I guess I fully agree with it yes. **I believe that's the situation, that's the case. I will let you know in two years time though if that is the case or no. But I believe yes. We are just guessing what it would be. In a perfect case scenario yes I will have learned from my experience and I would have built up and improved. But who knows what will be in two years time?**

MM: So what could go wrong then?

AA: **Everything can go wrong.**

MM: So you are saying you could have some bad experiences?

AA: Yes God knows everything can happen. **But if it's a perfect case scenario, if it's a lab enclosed environment, yes that experience that I got now it did actually make me more aware and more understanding of the female in the gym, and to lead to me being more understanding and more even careful towards towards a female in the gym of a certain age, yes. But God knows what it would be in two years.**

MM: So the only reason why it would change is if you learn other things?

AA: Suppose it will not change if it's up to me suppose it won't change in a bad way. **But it's not only up to me. A lot of who I am and what I'm doing and how I'm doing is up to me but it's not all of it.**

- END OF TRANSCRIPT -

ANNEX 6

Annotations, coding, theme development, and clustering for PFT07

a) Sample showing how noteworthy quotes were coded and developed into sub-themes using an open-source spreadsheet application (LibreOffice Calc):

Quote...	Code	Sub-theme
1 I wasn't really happy with the way things were	70101	Leaving company as a result of conflicting philosophies
2 At the moment I'm quite happy with the level	70102	Satisfaction with the results of ongoing learning over the years
3 She said, "Ah I see you're training girls now as"	70103	Realising upon being told by other
4 I'm actually feeling more comfortable training	70104	Natural tendency towards clients similar to self
5 In general I prefer, I've discovered this recent	70201	Impression of better understanding of men than women
6 I tend to take it a little bit easier with femal	70202	Recognition of own uncertainty when working with a specific client-group
7 Well, different personal trainers see their role i	70203	Awareness that different trainers see their role as a PT differently
8 But the way I see myself,	70204	Awareness of own sense of identity and self in the role of a PT
9 the main thing is, I teach people how to, or I	70205	Role of PT as teacher of exercise methods and techniques
10 not in a way, "This is how you should squat! T	70206	Sense of self as flexible and adaptive trainer rather than rigid
11 Meaning, it's just in the background, just follow	70207	Other aspects of role as secondary
12 I tend to forget things from the past even whe	70208	Awareness of difficulty in recalling information on request
13 I store them somewhere and when we start a	70209	Memories are recalled when triggered by conversation, not on request
14 So the interesting story I could recall is somet	70210	Able to recall a recent episode as a result of it's deviation from the norm
15 Very knowledgeable, very intelligent. Actual	70211	Feeling of hope upon classifying clients as knowledgeable and intelligent
16 They're quite, I won't really say athletic but	70212	Assessment of movement leading to speculation about background in sport or activity
17 I see one of the bodybuilders in the gym, one	70301	Prior conceptualisations of others affecting analysis of ongoing situation
18 I didn't say anything I actually found it funny,	70302	Sense of amusement when predicted behaviours play out as expected
19 I try not to chat up with other people because	70303	Policy of avoiding communicating with people when on client's paid time
20 and the other girl goes doing leg press and so	70304	Self-talk upon feeling surprised
21 Maybe in relation to me going to be a father	70305	Reflecting about own reaction/thought and contextualising according to changing situations
22 OK they are with the trainer so I, you know I k	70306	Experiencing a shift in perspective, seeing things in a different light and from different shoes
23 I realised I'm going to be a father of a girl, I n	70307	Recognising a change in thinking
24 I mean for me, really, people are people, really	70308	Belief that people are all equal in perspective
25 And now I'm much more aware of this. Much m	70309	Awareness of distractions other people must face
26 the first guy was a bit of a, you know a bit	70310	Stereotyping men according to their behaviour
27 the first girl was much more... attractive than	70311	Level of attractiveness of person as a factor affecting context
28 So I figured, alright, I guess this is how... I gue	70312	Situation playing out as expected
29 But then when it happened to the second girl	70313	Memorable situation as a result of expectations being challenged, and new conceptualisations made
30 I mean if someone did this to me it would real	70401	Imagining self in other's position
31 there are guys who have done this to me as w	70402	Imagining same experience happening to self and recalling episodes and associated feelings
32 as a guy, and as the you know, tell them to	70403	Assessing whether other is able to meet in the same way as self in given situation

b) The emerging clusters:

70205	Role of PT as teacher of exercise methods and techniques
70203	Awareness that different trainers see their role as a PT differently
70204	Awareness of own sense of identity and self in the role of a PT
70206	Sense of self as flexible and adaptive trainer rather than rigid
70207	Other aspects of role as secondary
70506	Sense of self as an observant learner from a young age
70104	Natural tendency towards clients similar to self
71311	Sense of self as different and more able than the majority of people
270101	Acknowledging fulfilling different distinctive professional roles
271502	Assumption that one will be better in ones' role in the future
270203	Importance of having a primary goal or focus
70307	Recognising a change in thinking
70102	Satisfaction with the results of ongoing learning over the years
70601	Using an internal "compass" to decide if something is good or bad
271202	Awareness of own state of being stressed or overwhelmed
270401	Thinking about something, but only moderately
71103	Sensing what is happening in others' minds by observing actions and reactions
271002	Awareness of a need to evaluate certain things
270804	Reflecting influenced by ongoing events in own life
71401	Recognition that own and others view of own self may differ
70306	Experiencing a shift in perspective, seeing things in a different light and from different shoes
70408	Perspective shift resulting in new and deeper understanding
70806	Deeper understanding of females due to changes in own circumstances
70901	Deeper understanding of pregnant clients due to empathising with pregnant partner
70604	Awareness of some processes that guide thoughts, but not others
270601	Differentiating a concept from a mental image

71201	Increased self-awareness as a result of being alone
270403	Notion that one can assume different perspectives in the same situation
270901	Realisation one has taken something for granted
270701	Awareness of a declining interest in a specific subject
71004	Satisfaction with own use of comparisons as a way of thinking
271602	Awareness that things can go wrong
70202	Recognition of own uncertainty when working with a specific client-group
71107	Humour about the idea of hearing voices
270703	Interpreting something in the context of own goals
71003	Results of comparison influence interaction, positively when similar, negatively when different
71002	Social interaction and assessment of others based on comparison
70801	Views of own training applied to view of clients' training
70802	Forming opinion of other based on body language and ways of verbal expression
70503	Being impressed by client upon knowing and understanding their stories
70501	Seeing people in terms of their relationships with other people
70309	Awareness of distractions other people must face
70803	Observation and opinion of other formed without influence from feelings
70805	Opinion and expectations of a person as a "drawing" of them in the mind
271404	Desire not to scare others
270702	Acknowledgment that clients must deal with certain emotions
270801	Evaluating others' verbal communication
270501	Sense of other as knowledgeable and determined
270301	Sensing other is making excuses
71202	Improved ability to observe others after having been alone
270202	Desire to give clients value for their money
271102	Acknowledgement that one can never know for sure what is happening in the mind of another
270103	Valid realisations triggered by communication with others
71104	Evaluation of different levels of depth in conversation among members of different cultures
271403	Awareness that a topic of conversation is personal and deep
71405	Indepth discussion as a rare occurrence
70304	Self-talk upon feeling surprised
71006	Self-talk as one of the processes of the compass
71007	Self-talk as a very personal and private process
71008	Self-talk as an ability arising from self-awareness
71101	Self-talk and reflection not possible when busy and distracted
71102	Self-talk as a means of evaluating behaviour from a young age
71105	Knowledge of others' self-talk of lack of as a result of asking them
71106	Self-talk as a "guiding voice"
71301	Suspicion that self-talk could become unhealthy in excess
71302	Self-talk as a natural process not needing controlling
71303	Inner-voice as part of self, acting as other
71304	Concern of sounding crazy when talking about self-talk and inner voice
71305	Inner voice offering restraint and insight in times of need, not needing to be controlled
71306	Sense of comfort found in being able to self-talk
71307	Absence of self-talk as a sign of excessive stress
71309	Self-talk absent when stressed or overwhelmed
271003	Internal voice jokingly considered as other person
271101	Self-talk as an important and valued process
271201	Noticing self-talk in others
71308	Presence of inner voice a reassuring sign of good health
70405	Self-questioning after the episode
71505	Session as learning experience for client, beyond scope of what is controlled by PT
71506	Some learning doesn't result in change of practice, but in change of experience or perception
71601	Learning is fluid and can change, and cannot result in predicted behaviour
71602	Learning can only be closely defined in a "lab" environment, reality is more complex
71502	Lessons learned don't stay static, they evolve and change
71503	Lesson learned not a thought but an ability, in this case raised awareness
71504	Learning doesn't have to be defined as specific things to be done differently in the future
70701	Shift in preference towards learning from own observations
71407	Lessons are recalled by the brain when needed, don't need conscious recall
70507	Awareness of own ability to learn from bad examples as well as good

71501	Inability to nominate exactly what was learned
71001	Importance of learning through making comparisons between times and places
70406	Reflection as unplanned, difficulty in telling oneself what to think
70407	Assuming that people cannot tell themselves what to think, and that this is common sense
70101	Leaving company as a result of conflicting philosophies
70301	Prior conceptualisations of others affecting analysis of ongoing situation
70310	Stereotyping men according to their behaviour
70313	Memorable situation as result of expectations being challenged, and new conceptualisations made
70902	Generalised "macho" behaviour as neither a good or bad thing
70903	Usefulness of "macho" behaviour
70303	Policy of avoiding communicating with people when on client's paid time
70308	Belief that people are all equal in perspective
70502	Recognition that care and protection of client is normal up to a certain point only
270402	Acknowledging a belief might be wrong
70509	Building values based on what you see
70909	Interplay between generalised behaviours in relationships across different cultures
70908	Differences in generalised gender behaviours in different cultures
271103	Acknowledgement that one can only assume or theorise
70201	Impression of better understanding of men than women
270602	Conceptualising a notion that is a composite of numerous processes
271001	Awareness of elements of normal daily mental processes
271601	Believing something to be the case
271402	Awareness of own mortality as a motivator to live fully
70312	Situation playing out as expected
271501	Some things don't need to be changed if they are not "bad"
70302	Sense of amusement when predicted behaviours play out as expected
70210	Able to recall a recent episode as a result of its deviation from the norm
70905	Importance of adopting and using generalised behaviours according to the situation
70906	Criteria of masculine behaviour type
70907	Ideas and generalised behaviours shaped by society
70602	Moral compass as a complex combination of processes including social influences
70603	Idea of moral compass inspired by a Bulgarian word
270204	Prior experience and knowledge of client affecting opinion of them
70702	Values based on better and worse rather than right and wrong
71310	Importance of "madness" in modern society
71402	Mental illness as unhealthy not "bad"
71403	Importance of awareness of physical and mental health
71404	Good health as essential to a fuller life
270902	Newfound empathy and appreciation for other gender
271401	Differentiating something bad from something unhealthy
71408	Brain will only recall when needed if it is healthy
70804	Context and opinion of others resulting in expectations formed by educated guess
70305	Reflecting about own reaction/thought and contextualising according to changing situations
70311	Level of attractiveness of person as a factor affecting context
70705	Decisions as "educated guesses" based on observable contextual factors and goals
70706	Decisions made upon considering client factors, levels and goals, not emotions
70904	Different contexts and situations call for different generalised behaviours
270302	Realising other factors are affecting context, previously unnoticed
270903	Significance of character traits as different from others they are combined with, and context
270201	Increased and decreased ability to guess in different contexts with different client types
70404	Putting self in other's place even in similar related hypothetical situations
70704	Speculating about emotional experience of client, playing down that of PT
70508	Speculating the "method" behind particular behaviours
70212	Assessment of movement leading to speculation about background in sport or activity
70402	Imagining same experience happening to self and recalling episodes and associated feelings
70403	Assessing whether other is able to react in the same way as self in given situation
70401	Imagining self in other's position
270803	Speculating what might have caused a thought
70703	Emotions as less useful for PT, natural for client

70211	Feeling of hope upon classifying clients as knowledgeable and intelligent
270102	Feeling of happiness and satisfaction with one's level of competence
71406	Fear a common consequence of the rare or unknown
70504	Respect for self-discipline and being knowledgeable
71203	Displayed emotion as something to be apologised for
270802	Describing an emotional state by stipulating emotions that it is not, elimination
70209	Memories are recalled when triggered by conversation, not on request
70103	Realising upon being told by other
70208	Awareness of difficulty in recalling information on request
70505	Personal values a result of upbringing and own experiences and observations
71603	Development is not totally under one's control
271603	Future as beyond one's control
71005	Reflections and self-talk just happening naturally and others as a result of being impressed by something

ANNEX 7

Sample sketch during reflective analysis of final themes

