A critical reflection on expertise, deliberate practice and interpreter training

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ABSTRACT

This dissertation examines the expertise and deliberate practice approach as applied to interpreter training through a student's perspective. A review of literature on the expertise debate revealed that the expert-performance framework and deliberate practice model marked a turning point. With a view of setting the latter into an educational context, namely that of group practice, the relevant learning theories in the domain of interpreting pedagogy were discussed. The above approach was then analysed through the prism of interpreter training, as part of the Supervised Training module at the FTI. This qualitative inquiry explores studies that challenge the expert-performance framework in favour of a multifactorial model of expertise, as well as views reconsidering the definition of deliberate practice. It then moves onto the author's critical reflection on the expertise controversy, the effectiveness of the deliberate practice approach and the Supervised Training module. It is argued that the expertise controversy furthered understanding into human potential and serves as a useful guide to identify the steps to attain competence in interpreting. Deliberate practice is an invaluable training tool and the module's design fosters learning. Nevertheless, learners may benefit from greater awareness of the underlying theory to ensure group practice is truly effective.

Keywords: interpreting, expertise, deliberate practice, supervised training, group practice

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
DP	Deliberate Practice
ELP	Expected Levels of Progress
EMCI	European Masters in Conference Interpreting
ETI	École de traduction et d'interprétation
FTI	Faculty of Translation and Interpreting
MGIM	Multifactorial Gene-Environment Interaction Model
ST	Supervised Training
TA	Teaching Assistant
WM	Working Memory
WMC	Working Memory Capacity

1. INTRODUCTION

Expertise in interpreting is developed through practice, which therefore has a key role in interpreter training. In this respect, the expert-performance and deliberate practice approach introduced by Ericsson's pioneering studies is regarded as a valuable framework to develop interpreting skills and its principles have been incorporated into the interpreting programme of the Faculty of Translation and Interpreting (FTI). The theory assumes that expertise is not primarily determined by innate talent but can be achieved through intense, purposeful and targeted practice, structured feedback and expert guidance. The expert-performance framework has come under close scrutiny over the last decade, with opponents questioning inconsistent evidence to back the view that experts are made rather than born, as well as challenging methodological issues and changing definitions provided by Ericsson and his colleagues over time. In recent years, studies have attempted to go beyond the nature vs. nurture debate and have taken a more holistic approach.

The contribution brought by Ericsson's innovative perspective on the theory and practice of skill acquisition would appear to be invaluable. Interpreting researchers have looked to the expert-performance and deliberate practice model to make new advances in understanding expertise in their own domain. At the FTI, this also involved a fresh take on the interpreting programme with a module designed around group practice. This dissertation aims at contributing in this sense with considerations from a student's point of view. Moreover, there seems to be little research on deliberate practice in interpreting and this paper may also help in this regard with a glimpse into a learner's perspective as part of an educational module on group practice.

1.1 Research question and purpose

The research question for this paper is: "*what reflections can be drawn as a conference interpreting student from the expertise and deliberate practice debate?".*

The question stems from the criticism the expertise and deliberate practice approach drew, particularly over the last decade. It seemed pertinent to encompass an evaluation of a

groupwork course designed as a deliberate practice activity, namely the Supervised Training (ST) module of the FTI's Interpreting Department.

This paper has a twofold purpose: on the one hand, it seeks to provide a thorough insight into the evolution of the expertise and deliberate practice approach, while on the other it aims to analyse and evaluate its application as part of the ST module from a student's viewpoint. The desired outcome falls within the category of fundamental research, in that it aims at furthering understanding about expertise and deliberate practice in the domain of interpreting. While the purpose of this kind of research is to add to the theoretical framework (Patton, 2002), this essay intends to inform interpreter pedagogy through a critical reflection from a learner's perspective.

1.2 Methodology and structure

This dissertation may be regarded as a qualitative evaluation project, in that it "attempts to understand and judge a phenomenon in its natural setting and in terms of the meanings participants bring to it" (Falchikov, 2001:180). Namely, it is designed to contribute to the evaluation of the Supervised Training module. It presents fundamental principles in close proximity with their application, though for brevity, given its scope, it does not go back to the actual origin of the constructs presented, as in the case of mental representations for instance.

Being theoretical in nature, this essay chiefly involved an investigation of the main pertinent literature, followed by a critical reflection on the theory and pedagogical approach presented and the ST module. First, it started with relevant theses and dissertations to gain familiarity with the topic and see which aspects had already been addressed and to what extent. The author then examined primary sources in the form of scholarly journals covering the expertise controversy, along with secondary sources. Extensive research on the expertise debate and on the deliberate practice model was examined to have a better understanding of the theories and models in question. It also helped to understand the approach to the topic by Ericsson and his colleagues, why their framework became extremely popular and later attracted fierce criticism. With a view of presenting how the framework was applied to interpreter training, the author then proceeded to examine the relevant learning theories involved. The chapter featuring the author's observations is meant to provide a constructive point of view that may help further improve the ST module.

This thesis consists of seven chapters. It starts with an overview of the main pertinent literature leading to the theoretical framework of expertise-performance and an explanation of the deliberate practice approach. In Chapter 3, it moves onto introducing relevant learning models and principles in interpreter education. Chapter 4 discusses how expertise and deliberate practice were introduced in interpreting studies and applied at the Interpreting Department, alongside an overview of the Supervised Training module. Chapter 5 illustrates the various arguments for criticism towards the expertise and deliberate practice approach, especially over the last ten years, along with inquiries aiming at rethinking both expertise and deliberate practice. After the theoretical foundations and a case study, Chapter 6 illustrates the author's critical reflection on the expertise and deliberate practice approach as a student who took part in group practice. Lastly, Chapter 7 examines the resulting conclusions and discusses potential pathways for further research.

2. LITERATURE REVIEW

The reason why some individuals excel in a given domain and others do not has long been a source of interest for scholars in a variety of fields, from psychology to education, from computer science to artificial intelligence (AI), for instance. According to the common-view approach, elite performers have some form of inborn talent that leads them to reach excellence, unlike average individuals with no innate superior qualities. This view seems to have persisted throughout history, with some 19th century scholars calling into play the role of biology and genetics in passing down through generations what was viewed as 'giftedness'. However, in the 20th century researchers began to question these assumptions and, more importantly, the evidence for these views. Scholars carefully examined previous research and explored whether other factors may have a more prominent role in attaining excellence, leading them to propose a theoretical framework based on a purposeful form of training, i.e. deliberate practice.

This overview of literature on expertise and expert performance focuses on the latter approach, known as the expert-performance model. The aim of this review is to provide a brief view of the studies on the topic starting from the 20th century and a comprehensive understanding of the key concepts involved by exploring differing views on expertise, what scholars came to understand as expertise and the pathway to achieve expert performance. Therefore, this chapter provides a bird's-eye view of the trajectory that led to the above theoretical framework, encompassing the studies that most contributed to it and acknowledging that Ericsson's detailed body of research had an enormous impact on expertise studies. Rather than intending to be a fully comprehensive portrayal of the whole range of studies on expertise, the focus will be on identifying the main themes that emerged over time.

For a more comprehensive view on the topic in question, it is worth bearing in mind the overarching context. In this paper, expertise and deliberate practice will be examined as they developed through the lens of cognitive psychology, which is "concerned with how we acquire, transform, represent, store, and retrieve knowledge, and with how that knowledge directs what we attend to and how we respond" (Solso, 1995).

2.1 Dispelling the myth of innate talent

Throughout history, 'talent' has been traditionally regarded as a relatively fixed innate feature and the definition of so-called 'giftedness' has been the subject of extensive research in a range of scholarly disciplines, with a noticeable rise in interest in the 19th and 20th centuries. Namely, a view that showed significant influence in the field was offered by Francis Galton at the end of the 1800s (Ericsson, 2009b). He proposed a perspective on expertise based on a high degree of heritability for expert performers, whilst he posited that average ones would not improve beyond a certain point as they would hit an upper limit to their skills (Ericsson, Nandagopal & Roring, 2009). Galton therefore argued that while training can improve performance, there are limits to the level of expertise one can achieve mainly due to innate talent or a lack thereof (ibid.). The notion of biological inheritance, as opposed to opportunity, as the primary factor leading to achievement proved to be controversial and spurred further research in the field.

In the 20th century, the study of expertise turned to the cognitive processes underlying skilled performance, as shown by research on chess mastery by de Groot in the 1940s (Ericsson, 2006a). Indeed, in the 1950s it dovetailed with a profound counter-revolution in the field of psychology in the United States (Miller, 2003) that shifted the focus of research from behaviour back to the mind, i.e. the transition from behaviourism to cognitivism. Expertise then attracted significant attention in the late 1960s, primarily driven by advancements in AI and the emerging field of cognitive psychology (Chi, Glaser & Farr, 1988). In the 1970s, research directed a substantial portion of its efforts to knowledge and expertise studies (Langley, 2016), with Chase and Simon's (1973) research on memory proving to be quite influential.

De Groot's work on chess players is regarded as crucial in laying the foundations for the theory of expertise (Ericsson, 2005) as it is widely recognised (Ericsson, 1994, 2006, 2008; Ericsson & Smith, 1991; Ericsson & Charness, 1994; Ericsson et al., 2009; Posner, 1988) as the first significant effort to capture expert performance by attempting to understand the inner workings of the mind, namely of chess masters and amateurs. Subsequent research on chess players' memory (Chase & Simon, 1973) built on this and argued that expertise in chess may simply derive from accumulated knowledge and experience, as well as differing memory skills in novices and experts (Ericsson, 2005). In an attempt to broaden understanding in the field,

Ericsson and Chase (1980) tried to reproduce an earlier study on memory with the aim of exploring whether short-term memory capacity was as a major constraint on information processing, as conventionally believed. Interest for research on expertise grew further, as shown by events and publications at the time, such as the first conference on the interdisciplinary nature of studies of expertise in 1983 held by Chi, Glaser and Farr, alongside Bloom's attempt to generalise findings on talent development (1985).

This is the backdrop against which some scholars started to present different views and findings when examining the development of expertise and the effect of practice. Staszewski (1988) noticed that the results of his study on skilled memory and expertise in mental calculation promoted "the view that experts are made, not born" (ibid.:124). He also posited that attaining expert cognitive skills is possible for individuals with normal intellectual abilities, provided they have the motivation to acquire the required knowledge through focused practice (ibid.). In the same vein, others found that assuming the direct inheritability of an ability was unconvincing (Howe, 1996) and questioned the evidence purporting this view (Sloboda, 1996). The viewpoint professing the prevalence of hereditary factors over practice was also pursued by Gagné, who argued that "aptitudes can and do develop, not only through maturation but also as a result of systematic training. However, this malleability remains within limits fixed by heredity" (1991, as cited in Ericsson, 2013:226), which is in line with Galton's views mentioned earlier.

Previous studies were also challenged because of descriptions of expertise based on experience and social recognition, including that of peers. Indeed, research highlighted that in numerous reviews the amount of accumulated experience was unrelated to higher expertise levels (Cooke, 1992; Ericsson et al., 2009). Hoffman, too, posited that "the accumulation of skill based on experience and practice are [...] not maturational processes […] *per se*" (1998:83). External perception of successful individuals is not considered as a reliable criterion either, as a person regarded as an expert may just have more experience compared to a non-expert or their outstanding performance on a given occasion may not be reproducible (Ericsson, 2004) or they may not perform better than non-experts under controlled conditions (Ericsson et al., 2009). As for peer recognition, this may be biased by social factors and context (Ericsson et al., 2007b). The same seems to apply to education (Ericsson & Lehmann, 1996), which researchers believe cannot be regarded as an objective criterion either. Hence, expertise needs to be proven (Ericsson & Charness, 1994).

When it comes to challenging a view of excellence mainly based on inborn talent, other scholars conducted more extensive and focused research on the subject. Namely, Ericsson took issue with the notion of a fixed upper limit to achievement for the 'ungifted' (Ericsson, 2003, 2009a) posited by Galton. Hoffman clearly describes any approach defining a limit above which improvement no longer takes place as "purely arbitrary" (1997:19). Ericsson carefully examined methods applied to measure and define expertise and rejected the findings of previous studies based on their unsubstantiated empirical method (Ericsson, Krampe & Tesch-Römer, 1993). He questioned the poor materials used to verify cognitive and perceptual abilities and the use of random samples of individuals rather than examining subjects exposed to prolonged domain-specific training. The scholar also rejected conclusions based on research on short-term training, instead of extensive domain-specific practice extending over years (Ericsson & Charness, 1994). Subsequent studies by the researcher challenged the anecdotal nature of evidence reported by subjects (Ericsson, 2002) and the use of retrospective reports where interest for an activity is interpreted as 'talent' (Ericsson, Roring & Nandagopal, 2007a). Moreover, Ericsson and his colleagues examined cases of perceived innate qualities that upon close examination were the result of specific circumstances, as in the case of blind musicians with exceptional memory skills (Ericsson et al., 1993).

Researchers also maintain that early performance levels in children are not reliable indicators of success or a sign of inborn talent, as "research on skill acquisition indicates that performance in the initial phases of practice is determined by characteristics quite different from those that determine performance during later phases" (Ericsson et al., 1993:397). Indeed, they argue that final adult performance is ultimately determined by a larger amount of knowledge that is better organised compared to less skilful individuals (ibid.). In questioning previous studies, Ericsson points out that they had a different focus, in that they aimed at detecting early signs of 'giftedness' in children to be able to identify future high achievers. The scholar argues that this approach has not led to solid evidence, which is why he instead focuses on performance that can be consistently replicated in adults or adolescents (Ericsson et al., 2007a).

2.2 Getting to the essence of expertise

Several scholars have attempted to define expertise from various perspectives, for instance in terms of knowledge structure, reasoning processes and cognitive development (Hoffman, 1988). Interest in the topic initially focused on differences between experts and novices, leading scholars to identify prominent features in high-skill performers. Meaningful efforts were made in this direction, namely with an attempt to generalise their characteristics (Chi & Glaser, 1988). Chi subsequently provided an exhaustive view of what experts excel at by recapping on findings reviewed at length in literature (2006:23-24):

- they excel at generating the best;
- they are able to identify features novices cannot detect;
- they can perceive the underlying structure of a problem;
- they focus on a qualitative analysis of problems;
- they have better self-monitoring skills when it comes to identifying mistakes and "the status of their comprehension";
- they are better at selecting the right strategies compared to novices;
- they display more opportunistic behaviour in terms of using sources of information and resources;
- they can find pertinent domain-relevant knowledge and strategies with little cognitive effort, have a higher degree of automaticity in performing skills and have more control over performance aspects where desirable.

Research also considers the role of knowledge, positing that experts mainly do well in their own fields of expertise because of their extensive knowledge (Chi & Glaser, 1988). Based on this, scholars indicate a strong interplay between how knowledge is organised – in so-called knowledge structures – and cognitive mechanisms (Glaser, 1987), purporting that there are high competence levels involved in said interaction (ibid.). Glaser adds that experts are able to recognise significant and substantial patterns in their fields of expertise, which is indicative of how their knowledge is organised (ibid.). The scholar highlights that studies focusing on expert-novice differences showcased that links between knowledge structures and problem-solving processes "are mediated through the quality of the representation of the problem" (1987:84).

More importantly, the kind of knowledge organisation conditions "the quality, completeness, and coherence of the internal representation, which in turn determines the efficiency of further thinking" (ibid.).

Subsequent studies turned to examining how expertise is developed, rather than just defining or describing it. They began to investigate the "continuous changes in cognition as a skill is acquired" (Cooke, 1992:32). This is in line with the developmental approach in modern cognitive theory, which focuses on mental representations of thought and the creation of mental models of the world (Encyclopaedia Britannica, 2023). In this respect, Feldman (1980) points out that cognitive-developmental theorists were referring to activity in broad areas of human endeavour, not in specific domains. Initial studies on expertise had instead followed the information-processing perspective, which considers the human mind as a complex computer system and "have perpetuated the novice-expert paradigm" (Campbell, Brown & DiBello, 1992:272). Campbell et al. highlight that "there are many areas of expertise in which it is not enough to extract rules and criteria from those who are already experts; it is necessary to know how, and through what stages, they got to be that way, and how others may to the same" (ibid.:291).

> Hoffman sought to provide an 'operational' definition of an expert, that is
>
> one whose judgements are uncommonly accurate and reliable, whose performance shows consummate skill and economy of effort, and who can deal effectively with rare or tough cases, and who has special skills or knowledge derived from extensive experience with subdomains (1997:200).

It is worth mentioning the features of high performance as defined by Sternberg (1998a, 1998b), who views abilities as forms of developing expertise. When it comes to applying it 'operationally', he posits that prototypical experts (as reported in Motta, 2013:89):

- have organised networks of concepts containing declarative and procedural knowledge;
- spend time trying to represent problems instead of immediately looking for a strategy to solve them;
- work known towards unknown information so as to solve problems;
- automate sequences of steps within problem strategies;
- predict the difficulty of and show efficiency in solving problems, and

do so quickly;

- monitor problem-solving strategies carefully;
- solve problems very accurately.

Subsequent studies therefore move away from the expert-novice dichotomy and shift the focus to the journey from novice to expert. In this respect, Hoffman, Shadbolt, Burton and Klein (1995:132) detail the progression to attain expertise, namely the various stages involved, by drawing inspiration from Medieval guilds. Broadly speaking, the scale of expertise starts with the "naivette" – "who is totally ignorant of a domain" – and "novice" stages before initiating education, followed by "initiate" and "apprentice" to attain the "journeyman" stage after completing the educational phrase. The last two stages are "expert" and "master" (ibid.:132), which are defined as follows:

Expert	The distinguished or brilliant journeyman, highly regarded by peers, whose judgments are uncommonly accurate and reliable, whose performance shows consummate skill and economy of effort, and who can deal effectively with rare or "tough" cases. Also, an expert is one who has special skills or knowledge derived from extensive experience with subdomains.
Master	Traditionally, a master is any journeyman or expert who is also qualified to teach those at a lower level. Traditionally, a master is one of an elite group of experts whose judgments set the regulations, standards, or ideals. Also, a master can be that expert who is regarded by other experts as being "the" expert, or the "real" expert, especially with regard to subdomain knowledge.

Table 1. The last two learning stages of development as defined by Hoffman et al. (1995:132)

Anderson emphasises the role of pattern recognition and memory in developing expertise. In reviewing previous studies, he argues that experts can identify familiar patterns in problems they are faced with and are able to remember more patterns (2005). Crucially, "as people become more expert in a domain, they develop a better ability to store problem information in long-term memory and to retrieve it" (ibid.:302). This means that they improve in being able to commit problem-solving strategies to memory and then find them when needed.

Lastly, Klein and Hoffman provide a definition of how experts are perceived:

> They notice the subtle but critical cues that others miss. They can reliably make discriminations that are opaque to others. They have clear judgements of the appropriate way to act in a situation. They can anticipate what is supposed to happen next, and their expectancies are so clear that they quickly notice when they are wrong, so that they can quickly rethink their interpretation of what is going on (1993:221).

2.2.1 Ericsson's in-depth analysis

Other studies provide a sharper focus in defining expert performers. Ericsson stresses the need for "greater empirical and theoretical complexity" (Ericsson & Smith, 1991:1) and a "focus on the empirical evidence that reflects stable phenomena that can be independently verified, and, ideally, reproduced under controlled circumstances" (Ericsson, 2002:22). Ericsson and Smith attempt to design a methodology to examine superior performance across different domains. Indeed, they extract three general principles for an empirical study of expertise based on a review of research of excellence in chess: 1) the need to capture "the essence of superior performance under standardised laboratory conditions by identifying representative tasks"; 2) "a detailed analysis of the superior performance"; 3) "efforts to account for the acquisition of the characteristics and cognitive structures and processes that have been found to mediate the superior performance of experts" (Ericsson & Smith, 1991:12). This approach assumes that the mechanisms underlying expertise are primarily acquired rather than inherited and it applies to various domains. The two researchers clearly define the remit of their research on expert performance, highlighting that "the expertise approach requires the design of a set of standardised tasks wherein the superior performance can be demonstrated and reliably reproduced" (ibid.:8), thereby excluding single fortuitous events from their studies. Building on the principles mentioned earlier, Ericsson comes to define expert performance as "consistently superior performance on a specified set of representative tasks" in a domain (Ericsson & Charness, 1994:731).

Ericsson (1996) also points out that reliability goes hand in hand with reproducibility and "once the superior performance of experts can be reliably reproduced in the laboratory, its mediating mechanisms can be described and identified by process-tracing methodology and traditional experimental methods" (ibid.:6). The scholar furthers his analysis and explores said mechanisms in depth, moving beyond the accumulation of large amounts of domain-specific

knowledge posited by de Groot and the automatic retrieval of information drawing on memory-based patterns and knowledge (Chase & Simon, 1973), as well as the option of easily accessible accumulated information (Ericsson & Delaney, 1998). In line with the call for greater complexity when approaching expertise studies mentioned earlier, Ericsson (2003) advocates for higher sophistication when exploring the underlying learning mechanisms of expertise as well.

The researcher assumes that expert performers are able to reach excellence because they acquire highly complex internal representations of domain-specific activities (1996, 2002). For a musician, this would mean "internally representing many aspects involved in mastering the interpretation of a new piece of music" (Ericsson, 2002). These representations would then support the various stages involved in the performance process in a given domain: planning, prediction, execution and evaluation (Ericsson, 1996, 2002, 2006). Indeed, these stages fall within the metacognitive and self-regulatory skills shown by experts (Glaser, 1987).

Elite performers are also able to refine the mental representations they have acquired for a given activity (Ericsson et al., 2007b, Ericsson et al., 2009, Lesgold et al., 1988) and this enables them to become faster, more consistent and expand their memory capacity (Ericsson, 2003). For instance, they may become faster in accessing relevant information required for a task or become better at anticipating it (Ericsson, 2006b). This allows expert performers to acquire greater control over relevant aspects of a task and feed into the planning-prediction-execution-evaluation process.

There is a certain amount of adaptation involved in expertise (Glazer, 1987) and performance improvement. Research has shown that the mechanisms that facilitate expert performance can be extremely adapted to the demands of task constraints within a specific domain of expertise (Ericsson & Lehmann, 1996) through purposeful practice. Investigators stress that said adaptation is not initially automatic and instead requires attention. To bring about changes in behaviour, it is essential to concentrate on generating the desired action, which will enable the individual to override the activation of the previous habitual response. Again, these changes require effort: in order to progress, learners need to monitor goals, processes and performance, and make the required corrections to their performance through feedback (Ericsson, 1996). Indeed, feedback is necessary to refine the mediating mechanisms allowing for improvement (Ericsson et al., 2007), thereby creating a virtuous circular process.

Studies point out that with practice individuals tend to reach acceptable levels of proficiency, tasks become automatic and hence less effortful (Ericsson, 2004; Hoffman, 1997). This means being able to 'intuitively' take decisions or carry out actions (Hoffman, 1998). Representations are therefore key in monitoring current performance levels to counter automated behaviour and identify strategies to keep on improving (Ericsson, 2002). In a paper intended for a medical audience, Ericsson argues that there is an actual physiological adaptation underlying this process, as

> The general Rule (or Law) of Least Effort predicts that the human body and brain have been designed to carry out activities at the minimum cost to the metabolism. When physiological systems, including the nervous system, are significantly strained by ongoing activity, such systems initiate processes that lead to physiological adaptation and mediation of simpler cognitive processes to reduce the metabolic cost (2009b:425).

However, the lower degree of concentration required when activities become automatic comes at the cost of losing control over the performance of the task and making changes harder (Ericsson, 2004). While studies assuming that innate talent has a crucial role in attaining expertise are based on the notion that individuals reach a fixed upper limit in terms of abilities, work by Ericsson (ibid.) argues that this assumption is not consistent with evidence showing that expert performers continue to improve their skills through practice. This way, they counter complete automaticity and they allow for a margin to keep on enhancing their skills (Ericsson, 2002). Experts do so by constantly engaging in demanding tasks, which forces them to use their problem-solving skills to seek better ways to perform tasks (Ericsson et al., 2009) and "stretch their performance" (Ericsson, 2006b:696) to avoid "arrested development" (Ericsson, 2003:113) and induce change. This is an essential tenet of the expert-performance framework, as "the central point is that the aspiring expert performer needs to be able to find ways to go beyond their current state of maximal performance and find a way through training to improve the mediating mechanisms" (Ericsson, 2009b:415). Indeed, engaging in effortless activities only serves to strengthen existing cognitive mechanisms, whereas deliberate practice leads to improvement as learners need to make an effort to 'strain' performance and modify these mechanisms (Ericsson et al., 2009). Moreover, as an individual's performance improves with new challenges, so does the effort required to achieve it (ibid.). The changes involved in this form of practice seem to be its single defining feature, i.e. "the ability to change and improve performance" (Ericsson, 2002:47).

Research (Ericsson et al., 1993) also identified a series of constraints involved in the process of reaching expert performance levels: early access to resources promoted by family (Ericsson et al., 2009), intense effort to be sustained for limited amounts of time and the motivation to improve performance. Indeed, scholars argue that "unique environmental conditions and parental support, rather than talent, may be the important factors determining the initial onset of training and ultimate performance" (ibid.:365). The argument seems to stem from earlier pioneering research on talent development in young children (Bloom, 1985) that recognised the key role of family support, along with other factors including motivation and outstanding teachers for instruction and guidance. Early studies on child prodigies (Feldman, 1980) pointed in the same direction in terms of education. This view was shared by Howe as he closely examined the early lives of individuals who had displayed exceptional abilities (1990, 1996) and others (Howe, Davidson & Sloboda, 1998). The role of motivation had also been emphasised in earlier research, with Posner highlighting its relevance in the journey to attain expertise considering the long commitment (Chi et al., 1988), as indeed a change in motivation may affect the desire to improve a skill (Fitts & Posner, 1967).

The expert-performance framework does not rule out altogether the existence of inborn qualities and their role in attaining expertise, though scholars argue that they are more likely to relate to personality traits, namely motivation and willingness to commit to sustained, focused practice (Ericsson, 2009; Ericsson et al., 1993, 2007a; Posner, 1988). This would tie in with the notion that "the development of expertise, like all forms of development, is subject to individual differences in psychological and behavioural characteristics" (Hoffman, 1998:83). Scholars stress that "observed heritabilities for cognitive tasks […] do not reflect upper-bounds of functioning (limits on attainable performance) when we are addressing these issues within the domain of general psychology" (Ericsson et al., 2007a:36). Furthermore, studies point out that "faster learning of 'talented' students may be explained by individual differences in acquired representations supporting effective learning, rather than any innate abilities or basic capacities" (Ericsson, 2004:79). Also, from a developmental point of view, expertise does not equate to intelligence. Indeed, a novice's difficulty in solving a problem is mainly due to their type of knowledge system rather than to their cognitive abilities (Glaser, 1987). Moreover, individuals who are experts in a given domain may show limited general intelligence or reduced ability beyond their field of expertise (Glaser, 1987; Hoffman, 1998; Ericsson & Smith, 1991). Ericsson

maintains that the genes required to activate the adaptations involved in deliberate practice can be triggered in healthy children, with the only known exceptions of body size and height (Ericsson et al., 2007b). Lastly, research argues that accumulated practice is able to override memory and reaction time deficiencies by providing domain-specific cognitive mechanisms and skills to bypass them (Ericsson, 2003; Ericsson & Charness, 1994).

In essence, when it comes to defining expertise, research (Ericsson, 1996) concludes that skilled individuals demonstrate faster reaction times, more accurate perception and superior memory when faced with situations representative of their area of expertise. In a more concise definition, Ericsson maintains that "the essence of expert performance is a generalized skill at successfully meeting the demands of new situations and rapidly adapting to changing conditions" (Ericsson, 2002:41). In contributing to the theoretical framework of expertise, the scholar illustrates how the journey to expertise is a rather complex one whilst still acknowledging the challenge of fully understanding expertise:

> It is unlikely that we will ever be able to fully understand how excellence is acquired. Even if we were able to specify the exact path of development for the highest levels of performance at some point in time, such as today, excellence is protean, not static, and by the time we discovered that description expert performers will have reached even higher levels of performance. The highest levels of expertise and creativity will remain at the threshold of understanding, even for the masters dedicated to redefining the meaning of excellence in their domains (Ericsson, 2002:52).

2.3 The road to mastery: deliberate practice

Expert performance requires a series of specific training conditions (Staszewski, 1988). After examining its underlying cognitive aspects, research was carried out to understand how its mechanisms are acquired and refined. This was done by illustrating how to train as effectively as possible to improve the processes mediating expert performance and eventually identify the generalisable features of this activity. In other words, after designing the theoretical framework of expertise involving complex cognitive representations to plan, execute, monitor and analyse performance, studies turned to examining how to practice deliberately. Efforts were made to identify expertise acquisition patterns across different domains by applying the methodology encapsulated in the three principles mentioned in the previous section (cf. 2.2), along with a scientific approach involving the more systematic and detailed examination of expertise called for earlier on (ibid.). Namely, this approach was applied to the study of expert performance in

high-level violin students throughout their childhood, adolescence and adulthood (Ericsson et al., 1993) through self-reports, meaning that the subjects were asked to recall and estimate their amount of practice. Researchers posited that a given level of expertise is the direct result of the amount of a specific type of practice, which they defined as *deliberate practice* (ibid.) and studies went onto gradually identify the most effective learning strategies involved.

Ericsson (1996) posits that reliably superior performance is displayed in conditions that encapsulate the essence of expert performance in a given domain. As practice needs to be representative of superior reproducible performance, the first challenge lies in identifying which tasks help improve a specific performance aspect (Ericsson et al., 2009). As mentioned, studies on expertise stress that superior performance needs to be reproducible, as otherwise it cannot be measured – hence consistency is a relevant aspect (Ericsson et al., 1994). Therefore, the first step to design deliberate practice consists in pinning down "representative tasks that capture the essence of expertise in the domain where the superior performer can exhibit their superior performance in a consistent and reproducible manner" (Ericsson, 2004:71). The activities need to be representative in that they capture the fundamental domain-specific features of a professional, as there must be a strong link between the training tasks and real-world performance (Ericsson, 2009a).

The tasks in question need to be carried out with specific attainable goals in mind, as they have to contribute to behavioural and performance changes to improve a given performance aspect (Ericsson, 2002). For learning to be effective, the goals need to be suited to the individual's current level of skill (Ericsson, 1996, 2017). Moreover, effective learners optimise improvement "by designing and monitoring their learning activities" (Ericsson, 2002). The importance of well-established self-monitoring had already been highlighted by Chi and Glaser (1988). Once improvements have been made, research maintains that they will become a consistent feature of an individual's performance, as "deliberate practice is designed to improve specific aspects of performance in a manner that assures that attained changes can be successfully integrated into representative performance" (Ericsson, 2004:73). It is worth bearing in mind that when working on a well-defined goal, individuals need to work on a weakness they want to improve (Ericsson et al., 2003), rather than focusing on their strengths. Indeed, the point of deliberate practice is to focus on weak points to address specific areas that require improvement.

Research on expertise across various domains found that expert performers practiced for a limited time (Ericsson, 2002; Ericsson et al., 1993; Ericsson & Charness, 1994), as purposeful practice is a mentally demanding activity that can only be sustained for a given period of time. Hence the limited duration of a training session to be able to sustain intense concentration. As a matter of fact, "unlike mere engagement in domain-related activities, which, as discussed, leads to arrested development and is not associated with further performance improvements, deliberate practice requires concentration on improving performance" (Ericsson et al., 2009:205).

Studies also show that expert performers benefit from clear, detailed, immediate and informative feedback (Ericsson, 1996, 2002, 2004; Ericsson et al., 2009). This feature ties in with the reflective element to learning posited by Ericsson (2002). For this to happen, learners need to acquire adequate knowledge and representations specific to a given domain to be able to assess the current performance against the desired one and identify the necessary changes to improve (ibid.). The scholar also highlights that there should be a short interval between the mistake and the evaluation stage "to maximize memory for the individuals' own thoughts that mediated the sub-optimal behavior" (Ericsson, 2000/2001:214). This is why deliberate practice needs to involve numerous opportunities for repetition and chances to correct errors after the problem-solving stage and/or feedback in order to implement the necessary changes and progressively attain the desired performance. This can be done by carrying out the same or similar activities a number of times (Ericsson, 1994, 1996, 2002; Ericsson et al., 1993; Ericsson et al., 2009). Moreover, Ericsson emphasises the close link between monitoring and evaluation skills and the acquisition of task-specific performance (2002).

The expert-performance framework also posits that superior skills are not attributable to current levels of practice, but to sustained training over a long period of time, as highlighted by Chase and Simon's paper (1973) on master chess players and by Posner (1988) in examining two previous studies on short-term memory in chess players and children. Namely, research points to extensive practice over a number of years to attain superior performance. It is worth examining what exactly is meant by this. Firstly, the development of expertise involves a series of qualitative improvements (Hoffman, 1998) and this is a gradual process, as studies point to the lack of evidence for sudden increases in achievement (Bloom, 1985; Ericsson, 2002, 2004; Ericsson et al., 2007a; Ericsson et al., 2007b). Research argues that improvements in skill are

indeed incremental and that said improvements can be viewed as a series of states, "a transition from one state, S[i], to another state, S[i+1]" (Ericsson et al., 2007a:14), meaning that performance is enhanced as a result of a cumulative process (Ericsson et al., 2007b). Secondly, after examining previous research on expertise in various domains, Ericsson, Krampe and Tesch-Römer (1993) assume that it takes at least around 10 years of full-time engagement for musicians, chess players and athletes as a reliable indicator for the development of expertise, also based on findings from previous studies – barring exceptions involving shorter periods of time and considering that in fields such as literature there may be an overlap with regular education (Ericsson & Charness, 1994).

Research on deliberate practice also highlights the crucial support provided by coaches, mentors or teachers to help individuals develop and improve their skills in a given domain. Namely, teaching techniques and "the quality of teachers" (Schneider, 1993:316) become more important with higher performance levels. They play a vital role in skill acquisition and performance enhancement by identifying the tasks learners need to work on, tailoring training activities and ensuring opportunities for improvement, monitoring improvement and providing guidance and feedback (Ericsson, 2004, 2009a; Ericsson et al., 1993; Ericsson & Charness, 1994; Ericsson et al., 2009).

Lastly, studies advocating for the expert-performance framework repeatedly stress that "deliberate practice is not inherently enjoyable" (Ericsson et al., 1993:371) due to the effort required. As mentioned earlier in this chapter, in this type of practice individuals need to address their weaknesses rather than focusing on strengths, precisely with a view of improving their performance (ibid.), which is understandably far from rewarding. The process involves a series of mistakes and errors despite full concentration, effectively making deliberate practice a "motivational challenge" (Ericsson, 2003:116). Although with reference to practice in general rather than deliberate practice, Fitts and Posner (1967) highlight that stress and fatigue do play a role in leading to degraded performance.

It is worth bearing in mind that the deliberate practice model used and broadened the essential features of a model initially devised by Bloom (Schneider, 1993). All in all, Ericsson et al. come to define the key features for improving performance as follows (Ericsson, 2020:1115):

1. The task must be well-defined with a clear goal and be fully understood by the participant;

2. The participants need to be able to perform the task by themselves;

3. The participants need to gain immediate informative and actionable feedback on each performance of the practice task that allow them to make appropriate adjustments to improve;

4. The participant needs to be able to carry out the same task or similar ones repeatedly;

5. The practice task must be designed and performed in accordance with individualised instruction and guidance of a teacher.

3. LEARNING MODELS AND PRINCIPLES IN INTERPRETER EDUCATION

Before moving onto research on expert performance and deliberate practice applied to interpreting, it seems pertinent to first provide a brief overview of the main relevant learning and skill acquisition models. This will offer a more comprehensive perspective on the development of expertise in interpreting and the design of deliberate practice for interpreters, namely the Supervised Training module at the FTI covered in the next Chapter.

Research conducted for this paper revealed that one of the most influential studies in skill acquisition is the work by Fitts and Posner (1967). The scholars developed a model to describe how individuals learn skills through a series of stages, the main three being (ibid.:11-15, emphasis added):

1. Early or **cognitive stage**: beginners initially focus on understanding the task at hand and its requirements; previously learnt strategies for acquired skills are applied to the new task; performance is prone to frequent errors during this stage; Anderson argues that "it involves an initial encoding of the skill into a form sufficient to permit the learner to generate the desired behaviour to at least some crude approximation" (1982:369);

2. Intermediate or **associative stage**: overt errors are gradually ironed out and learners show more proficient performance; they also develop stronger links between the various components needed to successfully perform a skill; Moser-Mercer (1997) asserts that this is when novices consider alternatives, discuss solutions and discover and experiment with procedures;

3. Final or **autonomous stage**: learners are able to carry out skills faster and more efficiently with minimal conscious effort; it involves "gradual continued improvement in the performance of the skill" (Anderson, 1982:369).

Therefore, during the final stage performance becomes faster and more automated, i.e. it requires fewer resources (Anderson, 2005). In this regard, Moser-Mercer et al. (2000) hypothesise that this may either involve greater processing efficiency and hence greater speed,

though with no changes to the actual processes, or a reorganisation of said processes, namely higher-level ones. Moving beyond the autonomous stage, Moser-Mercer highlights that "experts reveal better organization, more links among related concepts in different domains, and consequently faster access to that knowledge" (1997:257).

To further understanding on skill acquisition, Anderson (2005) applies his distinction between declarative and procedural knowledge to the above stages. He posits that during the cognitive stage learners are given instruction about a skill, which is then encoded as information about the skill and used to produce behaviour (1982:370). Hence learners develop a 'declarative knowledge' of what they need to do (Anderson, 2005). The associative stage is viewed as an intermediate step during which knowledge about a skill is turned into knowledge on how to perform a skill, that is into a procedural form (1982). The scholar labels the third step as the procedural stage, during which 'procedural knowledge' is fine-turned and this occurs at a faster pace. Developing expertise would therefore effectively mean gradually shifting from a declarative to a procedural knowledge of the skill, with skilled performance ultimately being determined by the latter (Anderson, 2005).

Research points out that those who are about to start a translation or interpreting programme will also have to develop tactical knowledge (Moser-Mercer, Frauenfelder & Künzli, 2000), defined as "the sequences of actions required to solve a problem or parts of the problem" (Anderson, 2005:289). This would tie in with Künzli's definition of a strategy, which involves precisely using declarative or procedural knowledge (as cited in Moser-Mercer, 1997).

Studies (Fitts & Posner, 1967) also devote attention to exploring the relationship between learning and feedback. They note that the latter is able to generate knowledge, in that it can be processed as other incoming information would be. Moreover, feedback can highly influence motivation by acting as a reward, which is why the scholars posit that it may be fundamental to learning and is to be provided promptly for best results. Lastly, it reinforces responses from learners.

To benefit from a more complete understanding of skill acquisition processes, it is also worth mentioning the six key learning mechanisms or conditions for learning to take place (Motta, 2013) identified by Langley and Simon (1981:374):

1. Knowledge of results, whereby the learning process must be able to identify where the performance improves or deteriorates;

2. Generation of alternatives following worsened performance;
3. Causal attribution, meaning that the learning system must be able to precisely associate the cause of the error with one of the system's elements;
4. Hindsight, where learning is regarded as efficient when performance is re-examined for assessment and causal attribution;
5. Learning from instruction, referring to the knowledge of results, causal attribution, information, problems and examples, etc. provided by a teacher and this may heavily influence what an individual learns and at what speed;
6. Automatisation, where by keeping on practicing skills, performance will improve in terms of speed and accuracy.

The above encompass elements of Fitts and Posner's skill acquisition stages and contain a reflective element, which is key to learning and will be further discussed in sub-section 3.2.

3.1 Cognitive apprenticeship

Collins, Brown and Newman (1989) illustrate the prominent role of apprenticeship as an educational model and argue that techniques traditionally used in apprenticeship to convey complex physical processes and skills should be redesigned for the purposes of teaching and learning complex cognitive skills, thereby leading to what they define as 'cognitive apprenticeship'. Scholars (Sawyer, 2004; Setton & Dawrant, 2016; Ruiz Rosendo & Diur, 2021; Seeber, 2021) point out that interpreter training has long been designed around the apprenticeship model, whereby learners acquire skills and knowledge by working closely with trainers. These would be experienced and skilled teachers who have reached the 'master' status of expertise defined by Hoffman (1997), which will be detailed in Chapter 4.

Collins et al. (1989) identify the following cognitive apprenticeship methods, noting that they are intended to help learners acquire expertise through observation and guided practice:

1. modelling, where an expert performs a task for the benefit of students; this is where cognitive processes need to be made apparent both on the teacher's side to provide feedback and on the student's side to learn by observing and putting into practice what they 'see' with support from an instructor and other students;
2. coaching, which involves observing the student's performance and providing help – for instance prompts, feedback, modelling and new tasks – to attain expertise;
3. scaffolding, which refers to "the supports the teacher provides to help the student carry out a task" (ibid.:17), primarily meaning physical supports or media;
4. articulation, in which students are expected to express "their knowledge, reasoning, or problem-solving processes" (ibid.);
5. reflection, which consists in "enabling students to compare their own problem-solving processes with that of an expert, other students, and ultimately, an internal cognitive model of expertise" (ibid.);
6. exploration, in which students are expected to carry out problem-solving independently.

The scholars also argue that techniques that promote self-correction and self-monitoring skills, also through group problem-solving, are a key requirement of cognitive apprenticeship. They acknowledge that while cognitive apprenticeship is not the only way of learning, some form of apprenticeship is the best method to attain expert practice, in which "students are expected to learn how to solve problems that arise in the context of carrying out complex tasks" (ibid.:5).

Lastly, Duffy and Cunningham (1994, as cited in Sawyer, 2004) state that cognitive apprenticeship focuses on "authentic learning environments in which the cognitive demands in learning are qualitatively the same as the qualitative demands of the environment for which the instruction was preparatory" (ibid.:77).

3.2 Reflection, self-regulation and meta-cognition

Studies on learning by Langley and Simon, and Collins et al. both contain a reflective element. Interpreter education research, too, notes that reflecting on the acquisition of skills is

beneficial for students (Sawyer, 2004). Moreover, in interpreting and translation programmes, studies promote an educational approach "in which students learn to analyse their performance and relate their progress in learning to the goals of the program" (Freihoff, 1993 as cited in Sawyer, 2004:81). The scholar's view on self-diagnosis and self-monitoring in foreign languages seems particularly fitting for interpreting students, who need to be able to assess the quality of their performance autonomously (ibid.). Furthermore, when students focus on meta-cognitive evaluation processes they "commit the necessary information into long-term memory and structures in a way that is optimal for fast retrieval (Moser-Mercer, 2008: 11).

Reflection is also regarded as a relevant teaching technique within the remit of cognitive apprenticeship (Collins & Kapur, 2014). In this learning model, it involves giving learners the opportunity to compare their problem-solving abilities with those of an expert, another learner and eventually developing an "internal cognitive model of expertise" (ibid.:114). The scholars stress that there are two forms of reflection: 1) a learner can compare their own performance with that of others; 2) a learner can compare their performance against a set of criteria designed to assess performance. Closely related to reflection is self-regulation, meaning "the learners' ability to make adjustments in their own learning process in response to their perception of feedback regarding their current status of learning" (Moser-Mercer, 2008:14). The three components of self-regulation (ibid.:14-15) are truly reflective of the deliberate practice model as illustrated by Ericsson in Chapter 2:

- self-observation – deliberate attention to specific aspects of one's performance;
- self-judgement – comparing one's current progress towards a goal with a standard;
- self-reaction – making evaluative responses to judgements of one's own performance.

The scholar posits that self-regulation also includes

> […] setting performance goals […], being positive about one's abilities; attending to and concentrating on instruction; effectively organizing, rehearsing and encoding information; setting up a productive work environment; using social resources effectively; focusing on positive outcomes; and making useful attributions for success and failure (ibid.:16).

As for meta-cognition, this is essential in developing expertise based on the deliberate practice approach (ibid.) and is closely ties with reflection. Meta-cognition is intended as "the

learner's awareness of their own knowledge and their ability to understand, control and manipulate their own cognitive processes (ibid., 2008: 10). This is crucial, as with good meta-cognitive skills comes the capability of monitoring and directing one's own learning processes (ibid.). The scholar posits how this ability can be fostered by modelling and feedback from either teachers, tutors or peers.

Lastly, Moser-Mercer highlights the importance of journalling to promote skill acquisition and posits that it helps metacognitive learners

> understand and encode the process, enables them to practise the skill and obtain feedback from within the learning environment in order to make the necessary adjustments regarding the effective use of the skill. It also enables them to transfer the process to new situations beyond those in which they have already used the skill (ibid.:11).

3.3 Sociological side of learning

Collins et al. (1989) turn their attention to the learning environment in which apprenticeship takes place. They note that in a traditional model apprentices work alongside both experts and other apprentices, thus fostering motivation, confidence and problem-solving skills. For instance, learners can compare their own performance with that of other apprentices, detect what they are doing well and what they need to improve on (ibid.). In addition, interaction with other learners fosters independent learning and helps students become aware of the "distributed nature of expertise" (ibid.:20). The scholars argue that this in turn promotes both a cooperative approach to learning and collaborative skills, as learners have another source of scaffolding. Based on the above considerations, Collins and Kapur (2014:116) identify four key principles involved in the sociological side of learning:

1. *Situated learning*, which means having students "carry out tasks and solve problems in an environment that reflects the nature of such tasks in the world";
2. *Community of practice*, which involves creating "a learning environment in which learners communicate about and apply the skills involved in expertise";
3. *Intrinsic motivation*, which refers to the need to foster an intrinsic motivation to learn;
4. *Exploiting cooperation*, which consists in ensuring "students work together in a way that fosters cooperative problem solving".

The above principles clearly show the relevance of students' active participation in learning, which is in line with the constructivist view of learning detailed below.

3.3.1 A brief word on constructivism

The expertise and deliberate practice approach falls within the cognitive-developmental theory referred to in Chapter 2. Developmental psychology encompasses a number of approaches, including the constructivist one (Campbell, Brown & DiBello, 1992). According to the constructivist view, learners actively construct their own knowledge by building on prior experiences, cognitive structures and beliefs (Motta, 2013). Moreover, constructivists argue that learning "involves the active creation of mental structures [Ed. by the learner], rather than the passive internalisation of information acquired from others, or from the environment" (Nathan & Sawyer, 2014:25). Therefore, learners are meant to be active participants in their learning process.

The social variant of constructivism views learning as a social process and scholars argue that "the knowledge construction process is inherently mediated by social interaction" (ibid.). Therefore, in an educational setting interaction – be it with teachers or other students – is essential in building knowledge. The relevance of interaction provides a valuable perspective on the role of instructors and peers in fostering learning, especially when considering a learner's current abilities and the help they need to progress to higher levels of competence. This ties in with Vygotsky's notion of a 'zone of proximal development', that is to say

> the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance on in collaboration with more capable peers (1978:86).

Thus, another individual with a higher level of competence would be able to bridge the gap between what a learner can currently do and what they are expected to be able to do by providing appropriate guidance and, as mentioned earlier (cf. 3.3), scaffolding.

Socio-constructivism is a learning theory that places learners at the heart of the learning process (Moser-Mercer, 2008). Namely, the scholar highlights that this model views learning as a continuous interaction between the cognitive structures of learners and their environment, alongside the feedback they receive. She also notes that it promotes interaction with peers, as this has a direct impact on the cognitive development of learners. It offers the chance to test the

effectiveness of a given skill or sub-skill in various scenarios – including those where there may be a socio-cognitive conflict where tutors or peers, along with teachers, have differing opinions on the best approach to perform a given skill or sub-skill – and helps acquire additional information on skill execution (ibid,).

3.4 Self- and peer assessment

Boud and Falchikov assert that "self-assessment refers to the involvement of learners in making judgements about their own learning, particularly about their achievements and the outcomes of their learning" (1989:529). The scholars note that when students evaluate their work without taking part in establishing the standards against which to do so, this would typically be referred to as self-marking. Research also recognises that this may be a skill that not all learners may have and therefore they need attempts to develop it and opportunities to practice it (ibid.). In the learner-centred educational environment detailed in the previous section, students take control of their learning, while with self-assessment they take responsibility for it – this ties in both with the idea of encouraging learners' meta-cognitive skills and their active involvement in learning. Research reports on the positive findings on the use of self-assessment in educational settings (Dochy, Segers & Sluijsmans, 1999:337):

- Students who engage in self-assessment tend to get higher marks in tests;
- Self-assessment leads to more reflection on one's own work, a higher standard of outcomes [...] and increasing understanding of problem-solving;
- Its accuracy improves over time and accuracy is enhanced when teachers give feedback on students' self-assessment.

As for peer assessment, Falchikov defines it as "the process through which groups of individuals rate their peers" (1995, as cited in Dochy et al., 1999:337). Dochy et al. highlight that it can be regarded as both part of self-assessment and as a method that feeds into self-assessment (ibid.). Indeed, viewing and evaluating a peer's performance can serve as a tool to reflect on one's own performance. It also fosters a sense of responsibility among students in that they are expected to be "fair and accurate" (ibid.:338) in assessing their peers. The scholars

highlight the importance in training learners on peer assessment and having evaluation guidelines.

As for its benefits, peer assessment was found to foster student engagement (ibid.), learning, critical reflection skills, autonomy and responsibility, as well as interaction and collaboration within a group (Iglesias Pérez, Vidal-Puga & Pino Juste, 2022). However, drawbacks were identified too, such as the difficulty of a learner dominating over the group or members not contributing to the evaluation process (Dochy et al., 1999; Cartney, 2010). Other studies report on peer pressure, favouritism or fear of disapproval (Iglesias Pérez et al., 2022). It is worth mentioning Cartney's (2010) observations in this regard, that is the notion of assessment just as a tool to measure learning and that of assessment to effectively foster learning. The researcher also draws attention to the gap between "feedback being given and feedback being used by students" (ibid.:2), i.e. to say the ability to act on feedback and devise improvement strategies.

Combining the two forms of appraisal was suggested as a solution (Dochy et al., 1999). When this takes place

> students are assessing peers but the self is also included as a member of the group and must be assessed. This combination fosters reflection on the student's own learning process and learning activities compared to those of the other members in the group or class (ibid.:340).

Iglesias Pérez et al. (2022) note that with both types of evaluation in place students have the opportunity to compare their own assessment with that of peers, which makes for a more objective appraisal and promotes self-reflection. The scholars also reviewed the effectiveness of these forms of evaluation in relation to student performance and feedback on it. It seems that self-assessment and peer evaluation emerge as fundamental elements within evaluation processes focusing on students in higher education (Wanner & Palmer, 2018 as cited in Iglesias Pérez et al., 2022). Iglesias Pérez et al. argue that a potential solution to the above drawbacks would be anonymity in peer evaluation to promote a more positive perception of the process. The scholars note that it would make feedback more constructive and lead to slightly better performance levels.

4. EXPERTISE AND DELIBERATE PRACTICE IN INTERPRETER TRAINING

Expertise studies have explored a wide variety of domains, from linguistics to law, from engineering to medicine and from physics and mathematics to aviation. These are just a few examples, though they are all "knowledge-rich" activities (Glaser, 1987:82) requiring extensive learning and experience and, more to the point, they all involve complex cognitive skills. This applies to interpreting as well (Moser-Mercer, Frauenfelder & Künzli, 2000). Chapter 2 broadly covered the pedagogical principles of deliberate practice and Chapter 3 provided a brief overview of the skill acquisition principles that come into play when implementing deliberate practice in an educational environment. This chapter aims to illustrate how the expert-performance framework and the deliberate practice model have been applied to interpreter training, including a section discussing how this has been done within the Interpreting Department of the FTI. Studies seem to have mostly focused on conference interpreting and in particular on simultaneous interpreting (Tiselius, 2013a), given its complexity (Dillinger, 1989; Motta, 2013; Riccardi & Russo, 2013), though research mentioned in this section does contain references to other interpreting modes as well. As for the complexity of the interpreting process, scholars point out that "developing expertise in interpreting requires the integration of a large number of sub-skills and sub-processes of language processing, of which most occur more or less simultaneously (Moser-Mercer et al., 2000:1). Indeed, Dillinger asserts that

> […] interpreters have to comprehend and translate the source-language text, as well as formulate, produce and monitor their target-language text, all while keeping track of the coherence of the original, the accuracy of their translation, the smoothness of their delivery, and the non-linguistic events in the setting (1989:2).

Moser-Mercer (2021) notes that the focus on interpreting expertise acquisition increased in the past as a new generation of post-war interpreters emerged through experience followed by training. This led to the first steps in reflection on the profession (Gile & Barranco, 2021) and motivated experienced interpreting professionals to design teaching models heavily influenced by their practical work. Tiselius (2013b) highlights that early investigations into the expertise theory explored the abilities of professional interpreters in the early 1970s and compared their performance to that of less experienced participants. The scholar notes that the expertise theory

was then introduced to the interpreting research community when Barbara Moser-Mercer invited Karl-Anders Ericsson to the interdisciplinary Ascona workshops held in Switzerland in 1997 (ibid.), attended by numerous psychologists and linguists (Gile, 2015).

By drawing on previous research, Riccardi and Russo (2013) note that expertise emerged as a topic of interest in interpreting in studies investigating the cognitive elements, processes and skills involved in the simultaneous mode. The underlying goal was to devise ways to identify the elements of expertise in interpreting to improve aptitude tests or understand the developmental aspect of the process and attain expertise as efficiently and as quickly as possible.

4.1 Expertise research in interpreting

Moser-Mercer (2021) highlights that research in interpreting expertise has long struggled to define what interpreting expertise entails. Indeed, scholars point to the wide variety of definitions of experts and professionals in interpreting studies (Hervais-Adelman et al., 2018 as cited in Moser-Mercer, 2021; Tiselius, 2013b, 2017), as well as differing process-tracing methods and qualitative data analyses (ibid.) for instance. In drawing on Jääskeläinen's observations on translators (2010, as cited in Tiselius, 2013b), Tiselius points out that, even if the are several signs of expertise in the interpreting domain, without prior assessment in participant selection it is not feasible to definitively ascertain whether professional interpreters truly meet the most rigorous criteria outlined in the expertise theory definition. Tiselius adds that "the definition of an expert interpreter remains unclear" (ibid.:94) and therefore there is limited understanding of the practices of interpreting experts. The scholar calls for more detailed and rigorous methodological investigations in this regard.

Furthermore, in examining interpreting studies through the expert-performance framework, Ericsson highlights the difficulties in identifying consistently reproducible superior performance in expert interpreters to be able to then detect representative tasks to practice with (ibid.). Another challenge lies in the definition of expert interpreters' mediating mechanisms, as evidence is largely based on self-observation of experts into their cognitive processes (Ericsson, 2000/01) due to the nature of the task. This means that said evidence "lacks independent verification and experimental validation" (ibid.:205).

The traditional assumption of innate abilities underlying expertise seems to have been initially applied to interpreting as well (Ericsson, 2000/01). It was assumed that high-flyers in the field had special processing capabilities (ibid.), as pointed out by Dillinger (1989) in examining previous research, and studies argued that "it all depended on an innate special skill" (Longley, 1978 as cited in Dillinger, 1989:17). Interpreters' ability to simultaneously engage in comprehension in one language and activate production in another language led to speculation about whether interpreters had a unique innate skill, along with the assumption that they had successfully automated many of the subprocesses involved in language comprehension and production (Moser-Mercer, 2000/2001). There were interpreting scholars who held the opposite view, such as Herbet (1978, as cited in Motta, 2011) and Mackintosh (1999, ibid.). Subsequent research seems to have been unable to establish a connection between success in interpreting and fundamental, and perhaps inherent, capabilities (Ericsson, 2000/01).

In examining differences between professional interpreters – the experts – and bilingual individuals – the novices – to identify what were assumed to be innate differences in skill, Ericsson contends that research did not seem to find any (2000/01). The scholar notes that this is in line with a wide series of interpreting studies pointing towards the development of new additional skills on top of prior thorough knowledge of languages. However, as noted by Tiselius (2013b), while knowing two languages involves a basic ability to translate, it is reasonable to presume that this does not guarantee an individual will develop professional skills or expertise in the interpreting domain. It is worth mentioning Dilliger's studies in this regard (1989, 1994 as cited in Ericsson, 2000/01). They did not detect large discrepancies between interpreters and those with high language proficiency. Ericsson notes that the text used was far too complex (ibid.) and hence not representative of the material with which professional interpreters work. In relation to Dilliger's 1994 study, Tiselius (2013b) argues that a method to measure the difference between professional interpreters and individuals lacking such experience is not immediately obvious. The scholar points out that examining the underlying cognitive processes in interpreting is a challenge, as approaches such as the think-aloud protocol or retrospective analysis would need to be adapted, given the nature of the activity.

4.1.1 From an expert-novice paradigm to a developmental approach

Much like the research on expertise examined earlier in this paper, the study of high performance in interpreting turned to examining differences between novices and identifying features of the latter (Sawyer, 2004). Hoffman (1997:199) applied the development stages outlined in previous studies (Hoffman et al., 1995) and illustrated earlier (Chapter 2) to interpreter training:

Naive	"one who is totally ignorant of a domain"
Novice	"someone who is about to begin studies in interpreter training"
Initiate	"a novice who has committed to progress beyond instruction" and who may have had "an initiating experience at consecutive interpreting"
Apprentice	"a student undergoing a program of instruction that goes beyond the introductory level and is intended to lead to the level of journeyman"
Journeyman	"the graduate who has just passed his final interpreting exams and is deemed fit to 'sit in the booth'"
Expert	"a journeyman whose judgements are uncommonly accurate and reliable, whose performance shows consummate skill and economy of effort, and who can deal effectively with certain types of rate or tough cases"
Master	"an expert who is also qualified to teach others. Traditionally, the masters comprise an elite group whose judgements set the regulations, procedures, standards, or ideals"

Table 2. The developmental stages of expertise applied to interpreter training by Hoffman (1997)

In turn, Sawyer (2004:72) applied the development model created by Klein and Hoffman (1993) and Hoffman et al. (1995) to interpreter education programmes:

Program Entry (entry-level assessment)

Novice

Has little experience; learns about objective, measurable attributes; context-free rules guide action; behaviour is limited and inflexible

A *naivette* is ignorant of the domain.
A *novice* is a new, probationary member of the domain and has some exposure to the domain.
An *initiate* has completed an initiation ceremony and begun introductory instruction.

Goal: Familiarity with domain

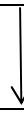
Degree-Track Selection (intermediate assessment)

Advanced Beginner

Notes recurring, meaningful situations; understands global characteristics; operates on general guidelines; begins to perceive recurrent, meaningful patterns

An *apprentice* is undergoing a program of instruction beyond the introductory level and is immersed in the domain through involvement with the professional community, in particular by assisting a mentor.

Goal: Basic consecutive and simultaneous interpreting tasks



Program Exit (final assessment)

Competent

Sees actions in terms of long-range goals or plans; is consciously aware of formulating, evaluating, and modifying goals; generates plans in terms of current and future priorities; can cope with and manage a variety of types of situations

A journeyman can perform a day's work unsupervised, although working under orders, and is an experienced and reliable worker who has achieved a level of competence.

Goal: Difficult consecutive and simultaneous interpreting tasks

Table 3. Expertise levels in interpreter education programmes by Sawyer (2004)

Sawyer points out that an instruction programme would enable the naive or novice to reach the journeyman level of competence (2004). Whilst acknowledging – with reference to Hoffman – that this is not an easy task, the scholar posits that it can be achieved by identifying the features of interpretation performance across the various stages. This has crucial implications in curriculum design for interpreting programmes, as once the expertise features have been detected they will serve as the basis of assessment (ibid.).

In this regard, it is worth recalling the skill acquisition model identified by Fitts and Posner illustrated at the beginning of Chapter 3. It serves as a learning trajectory to make the journey from novice to competent learner (cf. 4.2) and can be applied to the interpreting modes taught in educational settings. For instance, in the case of consecutive interpreting at the FTI, the cognitive stage would correspond to the consecutive interpreting masterclass taught at the beginning of the programme. This is when students are introduced to the basic theoretical principles and engage in rudimentary attempts to provide a consecutive interpretation. The associative stage would coincide with the language pair classes for the consecutive mode taught during the first two semesters. These classes provide students with the chance to gradually develop their skills and take into account alternative strategies as they transition towards an intermediate phase of their learning path. They will also be able to discuss solutions with instructors – and peers with the same language pair, if present – and experiment with approaches. This will enable them to reach the last step, the autonomous stage, and become proficient by the end of the second semester. At this point, students are required to perform at a basic professional level (cf. Appendix 2) and take care of maintaining their skills over the course of the third semester in preparation for their final exams.

To conclude on differences between experts and novices, Moser-Mercer (1997) purports that said differences emerge in two areas: "1. the *knowledge base* (declarative knowledge and procedural knowledge) and 2. *strategies* (procedural knowledge) (ibid.:257), rather than being "structural" (ibid.:260) differences. Indeed, the scholar argues that although abilities and aptitudes are important, "knowledge, motivation and the opportunity to learn interact to make a significant contribution to high-level performance" (Moser-Mercer, 2008:7). It seems apt to mention the definition of expertise in interpreting provided by Liu, that is "the result of well-practiced strategies in each of the comprehension, translation, and production processes, and the interaction among these processes, which are specific to the needs of the task of simultaneous

interpreting" (2008:159, as cited in Moser-Mercer, 2021). As for the actual interpreting process, Tiselius (2017:429) notes that interpreting expertise studies showed that experienced interpreters

- are better at switching attention between different processes;
- have a greater ability to monitor their output;
- are less likely to run into processing problems than their inexperienced counterparts, and when they do they have a wider variety of problem-solving strategies to choose from.

Ericsson acknowledges that they may be individual differences in interpreting students, in that when they start their studies they may have different levels of mastery of their working languages (2000/01). Moreover, research stresses that the enhanced proficiency shown by skilled interpreters, often regarded as a sign of automation in the sense discussed in Chapter 2, can be attributed to the development of more sophisticated mental representations (ibid.). Indeed, Ericsson argues that "expert interpreting is mediated not by fully automatic translation processes but rather by mechanisms and mental representations that provide interpreters with tools to gain more control over their translations" (ibid.:204).

It is worth noting that the expert-performance approach was applied to the domain of interpreting as an alternative to the traditional laboratory methods of cognitive psychology, which typically focus on examining "basic processes such as word recognition and categorization" (ibid.:208). Recapping on the framework's principles detailed at length in Chapter 2,

> The central idea of this approach is to identify stable phenomena of superior performance in everyday life and then reconstruct in the laboratory the representative conditions that elicited this performance in everyday life (ibid.:208).

In keeping with the principles of the above approach, one first needs to capture the consistently better performance of expert interpreters compared to individuals with mastery of languages but no training or experience in simultaneous or consecutive interpreting. This involves identifying representative tasks that effectively encapsulate the core aspects of interpreting and in which expert interpreters display a distinct higher performance. This would lead to an investigation into the actual processes promoting exceptional performance to identify the mediating mechanisms involved. Lastly, one would need to explain the source of these

mechanisms and, if they are learned, identify the specific practice that contributed to their acquisition (ibid.). As mentioned earlier (cf. 4.1), Ericsson notes that yet another challenge in the interpreting field seems to be detecting instances of consistently superior performance to identify representative tasks, as research on simultaneous interpretation seemingly reports average performance (ibid.).

As for memory skills, Ericsson argues that research on exceptional digit memory has a link to outstanding performance in interpreting. He states that the theoretical framework underlying the long-term working memory would help explain how enhanced comprehension and information encoding in the interpreter's source language can improve interpreting (2000/01). Van der Linden et al. (2018, as cited in Moser-Mercer, 2021) suggest that interpreters may have slight advantages in short-term memory. Along with other studies, Liu et al. (2004, as cited in Moser-Mercer, 2021) instead posit that the superior performance of experts was associated with their proficiency in specific interpreting-related tasks rather than a superior working memory, which may not necessarily be there. In this respect – though not with reference to the 2018 study mentioned – Moser-Mercer (ibid.) notes that findings have not provided a definitive conclusion due to typically small sample sizes and variations in the definitions of different expertise levels, which have hindered comparability and potential meta-analyses.

With regard to the mediating factors of expert performance in interpreting, Ericsson assumes they may be comprehension of the original message and the ability to extrapolate the main ideas and leave out redundant information. In the former case, he posits that interpreting students may benefit from listening to the output of professional interpreters (2000/01), both in simultaneous and consecutive interpretation. In the event of a discrepancy, students would need to examine differences to determine how they can improve their output. Ideally, this would be done with the supervision of a teacher to help them identify key elements (ibid.). In drawing parallels with pianists, the scholar argues that to improve on extracting the main ideas it would be reasonable to expect that successful individuals have spent extensive time engaging in specific practice.

Research also stresses the relevance of knowledge in interpreting expertise (Hoffman, 1997). Hoffman notes that this includes a broad general knowledge, source and target languages, accents and cultures, the topic interpreted and very strong memory skills. The scholar also posits

that mental modelling and memory organisation is a key distinguishing feature between expert and novice interpreters (ibid.). Indeed, Moser-Mercer (2008) aptly notes that high-level performance is mostly influenced by knowledge organisation and the handling of domain-specific knowledge.

As for experience, it is worth bearing in mind that interpreting involves skilling individuals who already need have a set of abilities prior to embarking on an educational programme in the domain. At the very least, they need to have a sound command their source and target languages (Tiselius, 2013b). Within the remit of simultaneous interpreting, Tiselius notes that there seems to be some divergence in research findings. Some studies suggest that interpreters with professional experience tend to make fewer omissions, deliver complete content, segment effectively, manage cognitive load well and stand out for their working memory capacity when compared to those with limited or no interpreting experience. Other research instead suggests that there is little disparity in terms of accurate delivery, cognitive load management or working memory capacity between interpreters with professional experience and those with minimal or no experience. The scholar points out that findings from previous studies indicate that investigating the impact of experience in interpreting is a complex and challenging task. One would think that experience would enhance interpreting performance, though research outcomes, including her own, are far from definitive (ibid.).

In a nutshell, it would seem that experts "see the forest rather than only trees" (Moser-Mercer, 2021:387) and they do so with ease and remarkable speed with a minimal error margin (ibid.). These are crucial attributes of expert performance and are particularly relevant in the context of a fast-paced task like simultaneous interpreting (ibid). The above appears to reflect two main features of elite performance in interpreting identified by Ericsson (2000/01): comprehension of the original message and the ability to extract the main ideas while omitting redundant information. The scholar also notes that experts are fast and are able to anticipate future moves – this would apply to interpreters too, as in certain instances they are able to anticipate the speaker's message.

Moser-Mercer, Frauenfelder and Künzli draw attention to the learning trajectory of interpreting students, whose performance may decline as complexity increases – meaning that "more complex representations replace less complex ones" (2000:4) – and then picks up again as they develop expertise. Given that this occurs at a rather advanced stage, aptitude testing is of

the essence to ensure students develop the required level of expertise within the duration of the interpreting programme (ibid.). In drawing on previous studies, the scholars note that key parameters are (ibid.:5):

- high proficiency in the active and passive languages and cultures;
- ability to grasp rapidly and convey the essential meaning of the original;
- ability to project information with confidence;
- good voice;
- broad general knowledge;
- speed of acquisition of new information;
- ability to work as a member of a team.

4.2. Deliberate practice research in interpreting

As this paper examines the expert-performance framework within the remit of interpreter training, 'competence' seems more apt than 'expertise' when referring to students in this subsection, as the former appears better suited to the 'journeyman' level (cf. 4.1) interpreting students need to reach, whereas the latter would be attained after years after graduating with both experience and continuous focused practice (Setton & Dawrant, 2016).

To develop advanced competence in interpreting, along with experience learners need practice (Moser-Mercer, 2021). Indeed, these two elements alone seem to constitute the rationale for skill acquisition, as Moser-Mercer (2000/2001) emphasises that practice and experience lead to changes at a cognitive level that help circumvent cognitive constraints involved in very complex activities, as in the case of simultaneous interpreting.

It is widely recognised that unlike other kinds of training programmes, in interpreter training the emphasis is on acquiring the practical skill of being able to interpret speeches (Aldea, 2008). To become proficient in conference interpreting, students need to clock in numerous hours of continuous practice (ibid.) and this is where the crux of the matter lies: not only learners need to practice, they need to do so effectively to develop competence. According to Motta,

> The *quality* of students' practice during their studies in an interpreter training programme will determine whether they are effectively able to circumvent cognitive constraints and reach the expected expert level by the end of the programme, thus completing the transition from novice to expert (2011:30, emphasis added).

As pointed out in the previous chapter (cf. 2.2.1), research posits that practice per se tends to lead to acceptable levels of proficiency, with tasks becoming more automated and requiring less effort (ibid.). However, this may also cause learners to plateau (Ericsson, 2000/01). To develop competence, students instead need to keep honing their skills, also in view of the increasingly challenging aspects on their learning path, such as fast speakers and dense speeches. Furthermore, deliberate practice fosters students' autonomy. As pointed out by Setton and Dawrant (2016), interpreting graduates will need to keep on engaging in deliberate practice long after completing their studies if they intend to become experts and not remain a 'journeyman'.

Moser-Mercer (2008) highlights the importance of focusing on quality over quantity in interpreting practice. In line with the principles of deliberate practice, she stresses that this does not mean simply repeatedly going over the same exercise for the sake of doing so or interpreting as many speeches as possible. Indeed, meaningful learning involves understanding and reflection, and "is more likely to promote transfer than simply memorizing information or developing routine skills" (ibid.:12).

The paper will now move onto how deliberate practice was applied as part of the Master's in Conference Interpreting at the University of Geneva as part of its Supervised Training module, which will serve as the basis for the student's observations in Chapter 6.

4.2.1 Deliberate practice in the classroom at the ETI/FTI

This section will focus on a practical application of the deliberate practice model in an educational environment. In this regard, it is worth noting that the model is applied with a different goal in mind compared to academic research (Herring, Tiselius & Motta, 2021). The scholars note that in a classroom setting the main idea is not to examine experts and compare their performance with novice's output. The objective is "to support learners (novices) as they develop their skills and become proficient practitioners of interpreting and to prepare them for continuing development throughout their careers" (ibid.:85).

As part of its post-graduate degree in conference interpreting, the FTI comprises a Supervised Training module based on the pedagogical principles of deliberate practice. Before

moving onto its structure and features, it is worth briefly going back to when it was introduced and why.

Motta (2013) notes that before 2001, students enrolled on a conference interpreting programme at the École de traduction et d'interprétation (ETI) – one of the FTI's former designations – were invited to arrange informal practice groups according to their language pairs. However, students had trouble understanding what was expected of them when it came to practice and feedback, as initially they were still unfamiliar with interpreting skills. Namely, they had difficulties in setting objectives and using adequate materials according to their level of progress, which lead to a lack of organisation. Group members would consequently feel demotivated and leave the group. Motta highlights that the underlying issues were likely to be due to a lack of supervision, hence a lack of scaffolding, and suitable feedback or modelling from individuals with greater competence. This would often result in students turning to speeches from the school's own database with advanced material far too early, interpreting as many speeches as possible, losing motivation as students trained on their own and with no source of information or feedback (ibid.).

Studies on skill acquisition and expertise development led to the innovative introduction of the pedagogical principles of deliberate practice approach as part of the school's curriculum in the form of the Supervised Training system. After making adjustments along the way to ensure the system would be effective, it subsequently became a permanent feature of the programme (ibid.).

4.2.1.1 The Supervised Training module

For the purposes of this dissertation, the structure and features of the Supervised Training module illustrated are those implemented in the academic year 2021/2022.

The module was introduced by the Teaching Assistants (TA) right at the beginning of the programme in the form of a meeting with students. During the meeting, the latter were provided with broad information on the module's underlying theory, the composition of the groups, guidelines on the structure of the sessions, the material to be used and feedback. The module comprised in-person training sessions of students with regular visits from the TAs. The students had previously been split into groups by the TAs, also based on the students' language pairs. The

latter were required to schedule at least four sessions per week during the first semester, totalling eight hours of training per week, and three sessions per week during the remaining two semesters, amounting to six hours of training per week. A TA would take part in students' sessions at least three times per semester, provide a speech and feedback both during the session and in writing on the Interpreting Department's e-portal TR@IN shortly after the visit.

Students were clearly guided through the sessions' basic rules during a presentation at the beginning of each of the three semesters, with a clear focus on the guiding principles of quality, rather than quantity, and reflection. As highlighted by Setton and Dawrant, “working together in pairs or groups outside class is vital to getting enough practice – but to make this work, some fairly precise guidelines are necessary to ensure that each session is useful and stimulating instead of frustrating or demoralising” (2014:176). Speeches would be delivered live by students and would be prepared in advance, for instance in the form of consecutive notes, though they were strictly meant not to be read out from written material. Indeed, "the prose read from such texts does not have the characteristics of impromptu speech, in particular as regards information density and delivery features, and is more difficult to interpret than actual interventions made orally" (Gile, 2005:136). Group members delivering the speeches would specify the topic beforehand, along with any relevant keywords. For variation, suggested activities during group practice included for instance memory games, speech improvisation, and activities on current affairs and general knowledge. This would enable students to work on both interpreting per se and ancillary skills.

Before going ahead with the speech, the student(s) interpreting it would set themselves a single, clear and specific objective to work on. They were encouraged to record their performance to be able to listen back to their interpretation, assess it in detail and include it in a journal where they would keep track of their progress throughout the programme. During the actual session, feedback would be provided first by the student who interpreted the speech – thereby acting as a form of self-feedback and enabling the student to work on self-monitoring – and then by peers, i.e. the speaker followed by the other students, and the TA if present. The key idea was to strictly adhere to the objective set at the beginning of the session, as deliberate practice is based on working on one performance aspect at a time. In providing feedback, students were also invited to not forgo the positives of their peer’s interpretation. In addition to the above, students would benefit from step-by-step guidance in the 'Best practice in consecutive

interpreting practice groups' and 'Best Peer Feedback' online modules, as well feedback guidelines (Appendix 1) available to students via TR@IN. They provided students with a brief overview of the tenets of deliberate practice, how to implement them and the dos and don'ts of feedback. Indeed, for it to be constructive feedback needs to be – at the very least – clear, immediate and informative (cf. 2.3).

The above student-led practice seems to reflect the stages of a performance process as identified by Ericsson (cf. 2.2.1) – planning, prediction, execution and evaluation – where the prediction stage may coincide with the strategy the student would apply to achieve the set objective. Moreover, the aspect a student decides to work on, i.e. the objective, reflects the principle of deliberate practice of working on one given aspect at a time (cf. 2.3). It would also appear to reflect Langley and Simon's learning mechanisms (cf. Chapter 3), in that with self-feedback and feedback provided by peers, students are able to look back at their performance to detect where it has improved or needs improving. In the latter case, they need to identify the cause of the worsened performance and learn from feedback to generate alternative strategies to enhance it. By going over the speech again or interpreting a speech where they encounter the same issue, they have the chance to implement the identified strategy and eventually automate that aspect of performance.

In addition to this, students were reminded to work with suitable material according to their degree of advancement, i.e. bearing in mind the progression involved in the training programme. This is why students were provided with the Expected Levels of Progress (ELP) for consecutive and simultaneous interpreting (Appendices 2 and 3) drafted by the Interpreting Department. As illustrated by Motta,

> This document spells out in some detail the progress expected of students in terms of their learning curve in consecutive and simultaneous interpretation and covers all three semesters of the programme. The document breaks the curriculum down into meaningful periods and identifies milestones in the programme, indicating what level should be reached by students at the end of each period (2013:155).

In turn, ELPs reflect the incremental nature of skill acquisition advocated in Ericsson's expertise approach. Skills are indeed meant to be acquired gradually and are regarded as cumulative. In this regard, Gile (2009, as cited in Diamond & Shreve, 2017) notes that "interpreter training in general has always recognized the utility of gradated training schemes and their relationship to the development of coping strategies" (ibid.:482). These are better

problem-solving strategies when faced with difficulties such as coping with speed, numbers or names for instance. Students are expected to refer to the ELPs during the whole duration of their training. Namely, in group practice they would serve as a reference both when preparing speeches, to ensure they are neither too easy nor too challenging, and providing feedback, to ensure it is not too lenient or too strict. Both stages need to be in line with the current level of progression for training to be effective.

The Supervised Training groups are based on a collaborative approach to learning – the underlying idea is to learn from each other. The collaborative element is also reflected in the assessment side of sessions, with students both giving and receiving feedback. The groups formed as part of the module also seem to reflect small communities of practice (cf. 3.6) in that students work on interpreting skills and discuss them. Moreover, this approach is also reflective of Vygotsky's notion of proximal development (cf. 3.4), whereby peers and TAs provide scaffolding to bridge the gap between current and expected performance.

The features of the module encompass the socio-constructivist model, in that students are the focus of the learning process and are invited to have an active role in learning skills, again with the coaching provided by TAs and peers. ST groups are a good example of this approach, where learning is regarded as "an ongoing process of interaction between the learner's own cognitive structures and their environment and the feedback received" (Moser-Mercer, 2008:11).

Group practice is a chance to foster meta-cognition in multiple instances: when the student thinks or communicates how they intend to attain their objective as this presupposes having to identify the best strategy to do so; during the feedback stage right after interpreting, with an assessment provided by the learner, peers and TAs; subsequently when listening back to the recorded interpretation and identifying errors and, based on them, what processes led to them and the best strategy to deal with the issue next time.

During group practice, students have the opportunity to freely explore different methods and refine them, set their goals and assess their strategies and current level in relation to the ELPs, also through feedback from peers and TAs. They do so in a setting where they engage in problem-solving independently, in keeping with cognitive apprenticeship (cf. 3.1). In addition, the module was not graded, precisely to relieve students from pressure in this regard. This provided learners with opportunities for repetition to correct errors after problem-solving and

feedback to implement changes (cf. 2.3). If students felt they needed to improve a given aspect of their performance, they would set themselves the same objective and focus on implementing the desired changes as they interpret. Students were also invited to prepare speeches according to other group members' difficulties, thereby fostering the collaborative spirit of the session. In this regard, it is worth examining the individual steps involved during a session after the speaker had informed the other group members of the topic and keywords and some brainstorming had taken place. The student interpreting the speech would then proceed to:

- set themselves a goal, typically based on either feedback received from teachers, TAs or peers or a weakness on which they feel they need to work following reflection on previous performance;
- think how they are to achieve that objective;
- interpret by focusing on that specific goal in mind;
- provide self-feedback on the set objective;
- listen to feedback from peers.

This may be followed by a discussion among peers after feedback, and the TAs when present, to engage in problem-solving as a group. This too helps foster the meta-cognitive side of learning. Students are able to discuss strategies to improve a given aspect of their performance and benefit from their peers' perspective, both when they agree and when they disagree as noted earlier (cf. 3.6.1). In this regard, peers provide scaffolding to their peers, thereby further helping all group members further understand the cognitive side of their performance.

With regard to feedback, it is worth noting that students were invited to pick up on recurring trends in their peers' interpretation, rather than simply list any mistakes they may have noticed. This appears to be essential, both when assessing oneself and when providing feedback, as if students learn how to extract these themes they learn to understand "when, where, why and how to use their declarative and procedural knowledge to solve new problems (Moser-Mercer, 2008:13). Furthermore, during feedback learners have the chance to articulate their reasoning, problem-solving strategies or express the issues they are dealing with, in line with the cognitive apprenticeship model (cf. 3.1). In doing so, they give peers the chance to also

evaluate the thinking process behind the mistake and problem-solving strategies. Students can compare their own processes and strategies with that of their peers and TAs (Moser-Mercer, 2008).

The Supervised Training module also supports self-regulation (cf. 3.2), in that students are expected to focus on specific aspects of their performance, are able to compare their current progress towards a goal with the ELPs – which represent the objective standard – and they can respond to assessments on their performance.

Meta-cognition is also promoted by modelling provided by other peers when they interpret and journalling. Indeed, using a journal to keep track of progress was strongly recommended. Furthermore, practicing together as part of a group may also help overcome the setbacks that come with learning and improve motivation. As noted by Gile, "it should be borne in mind that the learning process is virtually always painful and associated with much stress and feelings of frustration and failure" (2005:139). Even more so in the case of deliberate practice, considering the effort required.

5. CHALLENGING EXPERTISE AND RETHINKING DELIBERATE PRACTICE

The expert-performance and deliberate practice approach has come under close scrutiny in scientific literature. Namely, studies questioned the methodology and evidence supporting the framework, pointing towards the varying relevance of deliberate practice in achieving expertise and the need to examine the role of other factors as well, which in turn may have a degree of hereditability.

5.1 Research methodology

As mentioned earlier (cf. 2.2.1), Ericsson clearly defines the scope of his research, that is superior performance that can be consistently replicated under laboratory conditions (1996). Scholars challenged this experimental approach, as in the case of Gardner (1995), who believes experts would need to be studied in their environment. The scholar's rejection of Ericsson's studies seems to stem from a personal point of view, i.e. he quotes his own experience as a piano teacher and he does acknowledge that "Ericsson and Charness (1994) may retort that my response relies on considerations of logic and common sense, whereas their conclusions rely on "data" (ibid.:803).

In relation to studies on memory, Schneider (1993) questions whether laboratory assessments are really able to identify the key characteristics of expertise in real-life circumstances. Others too (Hoffman et al., 2014 as cited in Hambrick et al., 2016) noted that limiting research in this domain to a laboratory means excluding a number of significant professions that cannot be examined in such a setting.

Schneider notes that studies on expertise in adults comprised individuals "of at least average intelligence (e.g. physics professors, chess players)" (1993:322). Ackerman as well points out that that research by Ericsson and his colleagues only examine "reasonably highly talented individuals to start with" (2014:7).

Ackerman then goes onto question with the design of expertise research and contends that

> in nearly every case where individual differences measures have been administered to expert/elite and non-expert elite performers [...], the studies have been flawed by: (1)

> small samples, (2) restriction in range, (3) either poor or otherwise limited measures of traits, and (4) a misinterpretation of the literature on abilities and individual differences (2014:13).

Namely, in relation to the restricted range of individuals examined the scholar highlights that researchers did not apply the correct statistical method (ibid.). He also notes that the performance measure ranges considered are problematic when it comes to comparing pre-practice and post-practice stages.

Other studies (Hambrick et al., 2014b) challenge the viewpoint held by Ericsson and his colleagues again on methodological grounds. They re-examine research carried out in the field of chess and music to assess to what extent deliberate practice accounts for consistent performance variation and conclude that although deliberate practice does have a role in attaining expertise, it "does not explain all, nearly all, or even most of the variance in performance in chess and music" (ibid.:41). In considering other factors at play, Hambrick et al. note that working memory capacity has a limited effect in the context of musical expertise and that performance is not *consistently* predicted by general intelligence. Based on this, they highlight the manifest need to formulate expert performance theories that consider how the influence of cognitive ability on performance varies among domains and specific circumstances or tasks within a domain. The scholars also assert that data suggests a significant degree of variability in deliberate practice, even among elite performers (ibid.). The methodological approach of the above study was in turn challenged, namely in relation to the meta-analysis on music studies. Indeed, Platz, Kopiez, Lehmann and Wolf (2014) point out that "there is a lack of controlled empirical studies based on the expertise theory in the domain of music" (ibid.:11) and call for objective performance indicators (ibid.), rather than self-reports for instance, and longitudinal studies. The reliability of retrospective estimates was also highlighted as a matter of concern by Hambrick et al. (2014a). In examining translation and interpreting studies, Englund Dimitrova and Tiselius (2014, as cited in Tiselius, 2017) note that retrospective protocols are to be used with caution and then provide an extensive overview of the best methodologies for research in the field. The scholars also take issue with findings by Ericsson and his colleagues that draw on the correlation between proficiency in music and a single variable, i.e. self-reported practice time.

Miller et al. (2020) argue that Ericsson's definition of deliberate practice has varied over time and other studies (Hambrick, Macnamara & Oswald, 2020b; Macnamara et al., 2017)

examine this question more in depth. The scholars argue that Ericsson and his colleagues have provided multiple and contradictory definitions relating to expertise and deliberate practice over the years. The main points of their critique can be summarised as follows:

- inconsistency on whether deliberate practice is designed by both the teacher and the performer or just the former or the latter;

- lack of clarity on whether both solitary and group practice qualify as deliberate practice;

- inconsistent superior performance requirements;

- arbitrary nature of what would qualify as 'superior'.

5.2 Poor evidence

The thought-provoking thesis presented by Ericsson and his colleagues seems to have caused a strong reaction in the scientific community, thus making for what at times appears to be a fairly lively, if not fiery, debate. Gagné (2013) argues that the scholar misrepresented work by other researchers and expresses quite strong views on expertise studies led by Ericsson:

> the scholars systematically exclude relevant evidence, accumulate irrelevant information, ignore crucial objections, and select from published studies only the results that support their position. These repeated instances of ethically improper scientific behavior show their lack of openness to an objective examination of all the available evidence and reassessment of their entrenched beliefs (ibid.:191).

Other research argues that Ericsson focuses on “research that fits his perspective” (Wai, 2014.:122), omits findings that oppose his viewpoint (Hambrick et al., 2014a) and his critiques of studies by other scholars are based on errors in his portrayal of that research (ibid.). Wai also posits that the scholar may be so supportive of the expert-performance framework that he fails to consider “the full network of evidence surrounding a topic in order to uncover the truth” (ibid.:123). The above critiques seem to draw attention to the potential bias of experts studying experts (Sternberg, 1996). Namely, Sternberg points towards several points, as he argues that contradictory findings have been ignored, views have been made “non-disconfirmable” (ibid.:349), correlation was confounded with causation; there were no control groups, drop-out

effects were ignored, the selection of studies was made to ensure as much data as possible would fit the theory and common sense was ignored.

Other studies (Hambrick & Meinz, 2011; Hambrick et al., 2014a; Ullén, Hambrick & Mosing, 2015) challenge the hypothesis suggesting that deliberate practice enables individuals to acquire skills that "circumvent basic limits on working memory capacity" (Ericsson & Charness, 1994:725). Hambrick and Meinz (2011) refer to this as the *circumvention-of-limits hypothesis*. It is worth recalling Ericsson's view on working memory, according to which efficient access to task-relevant information is ensured by encoding it into long-term working memory (Ericsson & Kintsch, 1995 as cited in Hambrick, Burgoyne & Araújo, 2020a). The scholar posits that individual differences in working memory capacity (WMC) would reflect acquired skills and not general cognitive system aspects (Hambrick et al., 2020a). According to other views, WMC refers to "the ability to maintain information in an active and accessible state over a short period of time" (Engle, 2002 as cited in Hambrick et al., 2016) and that information is held in the short-term working memory (Hambrick et al., 2020a). Moser-Mercer notes that scholars currently view working memory as

> a dynamic system that includes both maintaining and manipulating information through a series of interactive components that include executive control and attentional resources and the processing of both verbal and visual material (2023:129).

Hambrick et al. (2020a) also contend that Ericsson was rather vague in relation to a series of aspects concerning his theory, such as the type of retrieval structures and the required time to encode information for instance.

In relation to deliberate practice, Hambrick and Meinz (2011) point out that working memory capacity is a parameter predicting performance even after accounting for deliberate practice's impact. Hambrick et al. (2020a) assert that "the current state of research on individual differences in WMC can be summed by stating that working memory tasks measure domain-general factors […] that are important for a wide range of higher-level cognitive tasks", while "less viable is the view that scores on assessments of WMC derive their predictive power from domain-specific skills" (ibid.:219). Interestingly, they argue that

> WMC is only one potential predictor of individual differences in complex cognition, even though research most often focuses on WMC as if it were the only predictor. […] whether and to what extent WMC may be expected to influence performance in some complex task depends on the environment" (ibid.:229).

One note-worthy study in relation to the circumvention-of-limits hypothesis is the paper by Liu, Schallert and Carroll (2004). Selected participants had differing interpreting expertise levels though they had comparable general working memory capacities, precisely to avoid the attribution of differences in performance to this factor. Whilst the scholars recognise the limited generalisability of conclusions due to the limited number of participants, according to their findings, "expertise may rely much more on acquisition of identifiable domain-specific skills than on general qualities such as a large working memory capacity" (ibid.:38).

Ullén et al. (2015) contend that an increasing amount of evidence shows that elite performance is linked to cognitive aspects and highlight the evidence showing that intelligence is a "highly hereditable" trait (ibid.:439). The scholars also argue that deliberate practice cannot be regarded as a way of bypassing genetic constraints and stress that behaviour genetic studies strongly indicate that the extent, and likely the quality, of deliberate practice is significantly influenced by genetics. They add that "even at high levels of expertise, intelligence and related constructs such as WM [Ed. working memory] are of importance for domains that require the processing of complex and novel information" (ibid.438).

With reference to the neurocognitive factors influencing translator and interpreter performance, Diamond and Shreve argue that

> Capabilities such as information-processing speed, executive function, and verbal fluency can almost certainly also act as limiting factors – cognitive constraints – during the performance of cross-language-processing tasks. If deliberate practice is the primary mechanism for building expertise, then one could also argue that an individual's neuro-cognitive factors can act as brakes on development by interfering with the efficacy of deliberate practice (2017:478).

The empirical soundness of evidence was also challenged in a meta-analysis on the major domains in which expertise has been examined, i.e. music, games, sports, education and professions (Macnamara, Hambrick & Oswald, 2014). While they note that "the strength of the relationship between deliberate practice and performance varied by domain" (ibid.:10), in their findings they report that deliberate practice accounted for a small variance in high performance (19%), leaving a large portion of it to be attributed to other factors. These may be the age when an individual starts engaging in deliberate practice, general intelligence – which they argue is "substantially heritable" (ibid.:11) – and working memory. Ackerman (2014) adds to the above physical limitations and ageing factors.

Little variance emerged when focusing on a single domain as well, namely sports (Macnamara, Moreau & Hambrick, 2016), though the researchers note that in this area it depended on skill level. In the case of sports, the starting age did not affect performance, though the scholars posit that there are other factors that may play a far greater role than deliberate practice, such as psychological traits, cognitive ability, working memory capacity, the ability to control attention, perceptual speed and psychomotor speed. Other meta-analyses too (Hambrick, Macnamara, Campitelli, Ullen & Mosing, 2016) challenge the empirical evidence underlying Ericsson's deliberate practice model to determine its relevance in individual differences. Once again, they contend that deliberate practice "explains a sizeable amount of the variance in expertise, but leaves an even larger amount unexplained" (ibid.:14). Namely, the scholars question the estimated amount of accumulated practice for musicians in Ericsson et al.'s seminal 1993 study and consider the estimates "highly inflated" (ibid.:18).

Macnamara et al. (2017:152) note that while deliberate practice manifestly influences the improvement in a domain of a single individual ("*intra*-individual variability"), expertise scholars recently challenged the view purporting that deliberate practice is responsible for differences in performance in a group of individuals ("*inter*-individual variability").

Gardner (1995) argues that when one considers psychometric intelligence, understood – to oversimplify – as a general factor of intelligence, there is scant evidence demonstrating that practice, "whether deliberate or not" (ibid.:802), can lead to sizeable performance variation. He suggests that it would be more productive to ask which individuals persevere in practicing, noting that the population samples in the studies in question would need to be better examined. All in all, Gardner is of the view that "exceptional performance can come about only when one beholds a happy confluence of biological proclivities and situational supports" (ibid.). In their reply to the above comment, Ericsson and Charness (1995) purport that the required innate abilities leading to performance are attributable to plenty of previous experience and pertinent activities.

Before moving onto the next section, it is worth mentioning a consideration made by Miller et al. (2020). They recognise that truly experimental studies on deliberate practice are few and far between. However, they note that in the case of widely recognised beliefs such as the causal attribution of obesity and smoking to mortality is actually inferred and that the harmful health effects are not supported by empirical studies on humans. Therefore, they argue that the

extent of the DP-expert performance correlation "to other predictor variables is sufficient to recommend its application in performance improvement efforts" (ibid.:9). They also contend that the 88 studies included in the meta-analysis by Macnamara et al. (2014) did not actually match the criteria to be defined as deliberate practice. Miller et al. (2020) conducted a fresh analysis of the above study's data set by applying a narrower definition of deliberate practice. Their findings suggest that the correlation coefficient for deliberate practice effects was notably greater than that observed in studies involving non-deliberate practice. They therefore conclude that there *is* sufficient evidence indicating that deliberate practice is linked to performance. Studies (Ericsson & Harwell, 2019; Hambrick et al., 2020b) report extensively on the debate spurred by replies to the meta-analyses mentioned here by both Ericsson and those who challenged the meta-analyses. A key recurring issue seems to be agreement on definitions and therefore studies falling within said definitions and evidence validity. Hambrick et al. come to conclude that

> As is the case for most measured variables in psychological research, the reality is that the reliability of practice and performance variables must be estimated and can never be known with certainty; […] Furthermore, the reliability of practice and performance variables may vary depending on factors such as the domain, the skill level and age of the participants, and so on. (2020b:9).

5.3 Towards a multifactorial model

While studies vary in the relevance attributed to deliberate practice in attaining elite performance, they agree that deliberate practice is necessary but not sufficient. This view is exemplified by Schneider, who argues that "the amount of practice may be a necessary but not sufficient condition for expert-level performance. Obviously, the intensity and quality of practice are at the least equally important in order to reach ambitious goals" (1993:316). Ackerman (2014) highlights that it needs to be motivated and Hambrick and Meinz (2011) contend that it is not *always* sufficient. As Macnamara, Moreau, and Hambrick put it, "deliberate practice appears to be an important piece of the expertise puzzle but not the only piece and not necessarily the largest piece" (2015:334).

Hambrick et al. (2016, 2020b) go on to explore what other factors may contribute to expertise. They posit that these may be

1) opportunity, such as being born in a given country rather than another, parental support;

2) basic ability, which they refer to working memory capacity and note that typical WMC heritability estimates are around 50%; they posit that "there are conditions under which WMC limits the ultimate level of performance a person can achieve in a domain (ibid.:26) and acknowledge that "this is not to say that there are no conditions under which WMC and other basic abilities can be circumvented" (ibid.); while recognising that "cognitive ability does not *always* predict individual differences in expertise (ibid.:30) they conclude that "correlations between cognitive ability and expertise are often not as large as those between deliberate practice and expertise, but neither are they trivially small, from either a statistical or a practical perspective" (ibid.:32);

3) personality, with reference to the strong dedication and motivation it takes to attain long-term goals, along with emotional control and susceptibility to performance anxiety; this was also reported in studies examined by Ullén et al. (2015);

4) domain-relevant experience factors, such as work- and play-related activities;

5) developmental factors, such as starting age, ageing effects; namely, they highlight that there is little evidence against age-related decline in skill;

6) genetic factors, namely the researchers note that there is evidence for genetic influence on variation in expertise; namely, they cite data relating to general intelligence, specific cognitive abilities and personality traits;

In addition, they point to research on the role of task/situational factors that may influence expertise development. Hambrick et al. (2020b) add experience-related factors and Macnamara et al. (2017) note that the interaction of said factors needs to be considered as well. As for genetic factors, Ericsson (Ericsson & Harwell, 2019) notes the genetics is looking into studies comprising information about an individual's practice history and their genome to identify aspects involving the expressing of genes in physical practice activities. Whilst standing his ground on his views, the scholar does appear to be open to future developments that may

produce scientific evidence on expert performance predictors, even if more in favour of innate talent (Ericsson, 2013).

Based on their findings, Hambrick et al. (2016) seem to advocate for an expertise model comprising a number of factors along with deliberate practice, which is "undeniably important from a statistical and practical perspective" (ibid.:45). The scholars point towards an integrated approach to examine said factors, namely the Multifactorial Gene-Environment Interaction Model (MGIM) proposed by Ullén, Hambrick, and Mosing (2015), which the authors maintained offered a suitable explanation for the empirical evidence available at the time. The model encompasses various genetically-dependent and genetically-independent variables likely to be involved in expertise development along with deliberate practice. Ullén et al. stress the complex interplay of these variables, even at different deliberate practice levels, and posit that their role may differ across different domains. Furthermore, in the MGIM the development of expertise is examined through a gene-environment interaction lens, where genetic and non-genetic factors, along with their interplay, are recognized as significant contributors to expert performance, deliberate practice, expertise-related characteristics, and their interrelationships (ibid.). Ullén et al. argue that the shift from a framework where one variable is deemed to a key role to a multifactorial one would be justified on methodological grounds. They posit that such a shift would also be reflected in the studies examined by a scholar, i.e. said studies would not fail to take into account research that examines other factors involved in expertise development. The new model does recognise the significance of deliberate practice in the context of expertise and acknowledges its "causal influences on expert performance" (ibid.:438). The volume by Hambrick et al. (2017) seems to move in the above direction, pointing towards an integration of the "science of expertise" (2017: xvii) with all life sciences.

Similarly, integration, this time of viewpoints, is advocated by Kaufman. He suggests that "the most complete understanding of the development of elite performance can only be arrived through an integration of perspectives" (2014:1), namely those of cognitive psychologists and individual differences researchers. Similarly, Hambrick et al. (2016) acknowledge that the debate on the origins of expertise may be reflective of the differing viewpoints of experimental psychologists, who – broadly speaking – focus on overarching data patterns, and differential psychologists, who strive to identify individual differences observed in measures of variance.

They also highlight that the heated debate on the origins of expertise may to some extent be attributable to pre-existing biases or beliefs regarding why some individuals excel in different domains compared to others. Suggested avenues for research include exploring how individual differences can influence the development of expertise, without necessarily limiting it (Kaufman, 2014) and adopting the view of expertise as a multifaceted phenomenon whose richness and complexity can only be truly comprehended by considering multiple variables and different methodological approaches:

> The experts are born versus made debate is over, and now the task for scientists is to develop and test theories that take into account the myriad ways that experts are born *and* made, using the most appropriate methodological approaches to test these theories (Hambrick et al., 2016:45).

Kaufman notes that inspiration may have a role in attaining expertise, as it is "associated with an approach motivation, positive emotions, and an increase in creative productivity" (2014:2). The scholar also posits that motivational traits could potentially enhance cognitive efficiency.

It is worth noting that Hambrick et al. call for a collaborative approach in expertise studies based on the 'open science movement', which "promotes normative values aimed at increasing accuracy, openness, and fairness in scientific research and scholarship" (2020b:15).

Lastly, Moser-Mercer (2021) reports on approaches in different areas of interest for interpreting expertise researchers, such as psychometric methods, frameworks focusing on the analysis of activation and brain plasticity, as well as studies on superior anticipation to name a few. It is worth mentioning the scholar's observation on a potential and a more significant shift in the definition of expertise that moves away from domain-specific extraordinary performance and instead places emphasis on exceptional multitasking abilities and the capacity for fast and life-long learning.

5.4 Rethinking practice

The above studies seem to disagree on the factors contributing to expertise and their relevance in its development, though there seems to be a broad consensus on the fact that

expertise generally requires extensive practice. As briefly detailed earlier in this chapter (cf. 5.3 and 5.4), Ericsson was responsive in replying to the strong views his theoretical framework attracted and later introduced two new types of practice, defined as 'naive practice' and 'purposeful practice'. The former refers to mere repetition, while the latter is "an activity that has well-defined, specific goals and involves feedback, but which is self-directed rather than teacher-directed" (Hambrick et al., 2020b:7). Ericsson clarified that deliberate practice differs from purposeful practice in that it entails a field that is sufficiently advanced, in which top performers have achieved performance levels that distinguish them from newcomers (Ericsson & Pool, 2016) and "requires a teacher who can provide practice activities designed to help a student improve his or her performance" (ibid:98).

Ullén et al. (2015) note that there is often no clear distinction between deliberate practice and other types of practice. Indeed, practice per se is typically intended as the actual performance of a task (Howard, 2009). The above scholars also stress the presence of evidence that domain-specific experience can enhance performance and that the ideal practice approach can differ based on an individual's personality (ibid.). It is worth noting that ultimately Ericsson asserts he is open to future developments:

> I look forward to new and further refined definitions and associated measures of amount and quality of different kinds of practice, that will take us beyond distinctions between naïve, purposeful, structured and deliberate practice and hopefully uncovering practice activities that will more effectively improve particular types of performance. This would allow the steady accumulation of empirical evidence to identify the best predictors of attained performance […] (Ericsson, 2020:1119).

The definition of practice emerges as a theme in the commentary by Herring, Tiselius & Motta (2021). The scholars posit that employing the term 'deliberate practice' in a classroom or educational settings may pose potential issues and suggest the use of 'skill development-focused practice' (SDFP) "to refer to activities and exercises employed to improve and develop interpreting skill, whether inside or outside a classroom environment" (ibid.:85) in interpreter education. SDFP is set apart from deliberate practice (and reflective practice for professional contexts) in that the latter is viewed as a term used in expertise research "to describe and identify the type of exercises that very successful performers engage in to become highly proficient and to sustain their level of performance" (ibid.). The researchers note that while there may be some degree of overlap between deliberate practice, reflective practice and SDFP,

they argue for the need to define and name the goal-oriented practice of educational settings. SDFP shares the following features with deliberate practice (ibid.:84):

- motivation to improve;
- structured and clearly delineated tasks;
- practice viewed as a 'cycle';
- learners are given practice opportunities;
- feedback is provided to learners.

To the above, researchers add the following elements, which clearly reveal a focus on the classroom environment (ibid.):

- "systematic planning and structuring of the learning experience – individual practice activities fit into a planned, coherent learning progression";
- "specific, achievable, measurable, and clear" practice goals;
- "feedback that is regularly provided to the learner and is tailored to the goals of the activity and its place/purpose in the learning progression";
- learners are required to engage in self-assessment and reflection;
- "practice is seen as an integral part of skill acquisition, requiring sustained focus and investment of time and energy".

Herring et al. take on board criticism made to the deliberate practice model, which is viewed as only one piece of the expertise 'puzzle'. Likewise, they note that SDFP is part of learners' skill acquisition process. The scholars also highlight that learners need guidance in developing critical reflection and self-assessment skills and point towards the need to further explore SDFP.

6. STUDENT'S PERSPECTIVE

Based on research examined for this paper, the expert-performance framework and deliberate practice model seem to have been fairly influential in interpreting studies and pedagogy. Interpreting researchers who turned towards cognitive psychology and expertise investigations helped further understanding into interpreting as a skill acquisition process and deliberate practice paved the way for new training approaches. Gile (2015) argues that insights from cognitive psychology and cognitive science have strengthened the view that interpreters are developed through learning rather than being inherently gifted and have impacted "how interpreter trainers think about their students and how to help them" (ibid.:58). The Supervised Training module at the FTI's Interpreting Department seems to be a case in point, in that it serves as a training blueprint for group practice.

Before going ahead with observations on the expertise debate, the deliberate practice model and the Supervised Training module, it is worth stepping aside for a consideration on my point of view as a student. At the time of writing this dissertation, I have completed the formal training required for the Master's in Conference Interpreting at the FTI, which means that I have taken part in group practice for a total of three semesters. While on the one hand this puts me in the ideal position of having first-hand experience of deliberate practice, on the other my perspective on the ST module will inevitably be shaped by my perspective as an interpreting student, rather than having the more detached approach of an observer. In this respect, this dissertation may be tainted by a 'heuristic' bias in that "heuristics is a form of phenomenological inquiry that brings to the fore the personal experience and insights of the researcher" (Patton, 2002:107) – with perception trumping observation and hence subjectivity potentially trumping objectivity, though "distance is no guarantee of objectivity" (ibid.:49). On the flip side, a student's viewpoint may be useful to gain insight into the so-called 'hidden curriculum', which is "the curriculum as experienced by the individual student and teacher" (Pöchhacker, 2004:189). It may therefore serve as an insider's view that can help gauge the effectiveness of a module based on the principles of deliberate practice and the socio-constructivist learning model.

6.1 Reflection on the expertise controversy

Chi's (2006) observations on expertise studies would seem a suitable starting point for a reflection on the expert-performance framework. The scholar posits that research has taken two approaches in studying expertise: an absolute and a relative view. The former examines exceptional individuals as distinguished from the rest of the general population and assumes that excellence or creativity are attributable to chance and inborn talent. According to the relative approach, experts are studied in relation to novices and expertise is conceived as a proficiency level novices can attain. The underlying goal of the latter view is to understand how to ensure less skilled individuals achieve the required level of competence, which would appear to be in line with the objectives of an educational curriculum. Indeed, "the goal is to understand how experts became that way so that others can learn to become more skilled and knowledgeable" (ibid.:23). This definition seems to emphasise the increase in skills and knowledge, rather than the need to attain the highest level of expertise, and would appear to be suitable for an educational setting. Moreover, an absolute and a relative view on expertise appear to be more constructive – or at least more pragmatic – than the nature vs. nurture debate.

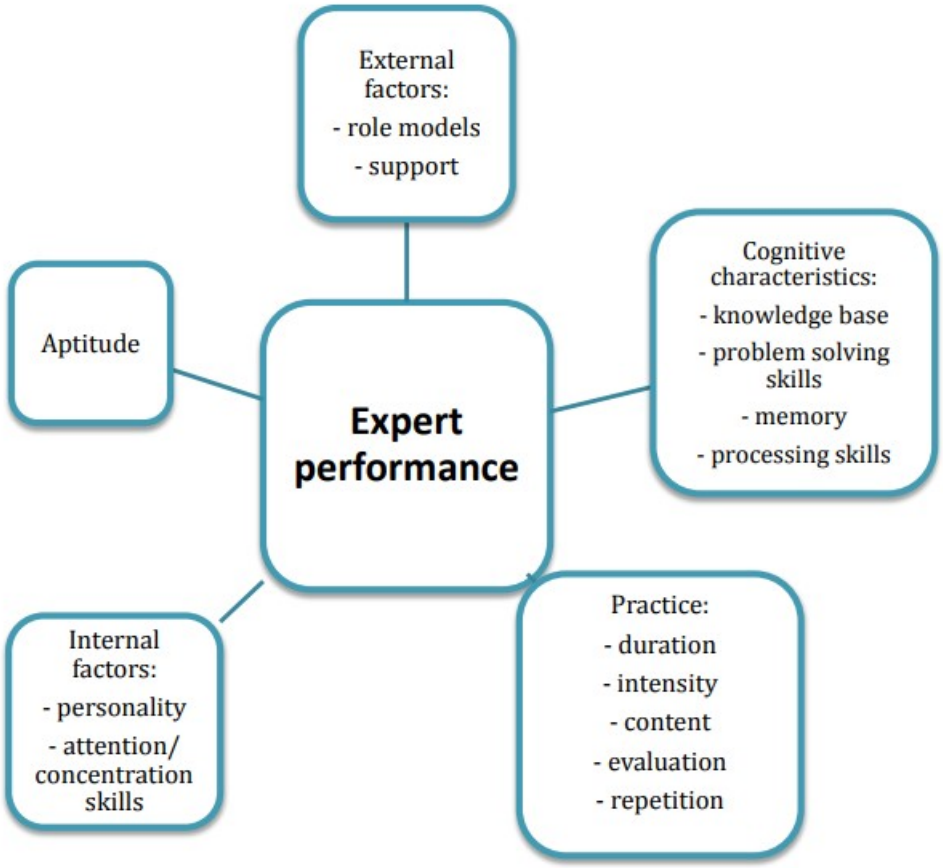
With regard to criticism concerning poor evidence (cf. 5.3), scholars have posited that Ericsson and his colleagues' perspective may be biased. It is worth recalling the scholar's words in an interview:

> I grew up in a family in Sweden where I was made to believe my siblings and I could succeed at anything that we wanted. The primary obstacle was that success took a lot of effort and time so one should try to find something that is sufficiently interesting to allow one to endure the extended process of acquisition (Ericsson & Schraw, 2005:405).

In the same vein, he subsequently added that "the basic belief that superior achievement can be explained in terms of acquired characteristics has been my default assumption" (ibid.). Having said that, in the studies examined for this paper Ericsson comes across as a staunch supporter of scientific rigour and the call for an empirical approach to expertise seems precisely what drove his studies (cf. 2.2.1). This view is reflected in his description of said approach, that is a "focus on the **empirical evidence** that reflects **stable phenomena** that can be **independently verified**, and, ideally, **reproduced under controlled circumstances**" (Ericsson, 2002:22, emphasis added).

As for the predictors of expertise in interpreter training, this is a function fulfilled by aptitude tests. In an educational environment, the interest would be to identify the fundamental features of an expert interpreter and draw on them to detect the required skills and sub-skills to be integrated into programmes to train future interpreters, i.e. to develop professional expert-performance as opposed to absolute expertise. As successful candidates have already undergone a selection process, they are deemed to be potentially able to develop the skills needed to attain the 'journeyman' level mentioned earlier (cf. 4.1.1). In drawing on Motta's recap on the main features of expertise below, this would mean they are thought to have the necessary aptitude, attention and concentration skills, and cognitive characteristics to develop the competence required to enter the job market and possibly attain expertise further down the line.

Figure 1: a summary of the main features of expertise as identified by Motta (2013:95)



Interpreting programmes with an ST module such as the one in Geneva will then provide structured training based on the deliberate practice model. The remaining features, i.e. external factors in the form of modelling and support, are also encompassed in the programme to enable

students to develop the required skills. As for personality traits, although some of them are covered in sub-section 6.3.4 as part of other considerations, these would be beyond the scope of this paper.

Ericsson notes that the 'nature' view of expertise has the drawback of leading to a rather fatalistic view of learning:

> once you assume that something is innate, it automatically becomes something you can't do anything about [...]. This sort of circular thinking [...] is worse than useless; it is damaging in that it can convince people that they may as well not even try (Ericsson & Pool, 2016:168).

Some scholars have criticised the 'nurture' view held by Ericsson and his colleagues, arguing that it would set up the less capable for disappointment. Yet, according to the 'nature' view it may not be worth putting in the effort and energy to develop expertise, somewhat recalling Galton's upper limit mentioned in Chapter 2. Furthermore, to condense Ericsson's theory on expertise as any individual has the potential to be a genius would seem to be an overt oversimplification. In the research examined for this paper, he carefully defines the scope of his research, starting with individuals who have benefitted from favourable environmental conditions and an early introduction to the domain in question during their childhood. In one study, he goes so far as asserting that children who become elite performers as adults are not "randomly" matched with their training, so they may have "something different" about them (Ericsson & Charness, 1994:744). Moreover, the scholar argues that there "must be" (Ericsson & Schraw, 2005:402) individual variations in the motivational factors that lead to the higher probability to engage in prolonged deliberate practice. The scholar also points out that motivation needs to be cultivated, also with the aid of a supportive environment.

All in all, it may be more accurate and less misleading to capture Ericsson's argument as effective practice does count, provided there are a series of conditions in place: early exposure, adequate equipment, first-class teachers and motivation. The expert-performance framework spearheaded by Ericsson deserves credit for elaborating extensively on training and appears to have contributed to seeking a deeper, more complex understanding as to how individuals make the journey from novice to expert and namely the cognitive mechanisms mediating expertise. The debate was then brought further forward by the critics of said framework who ultimately

suggested a more comprehensive and complex view of expertise, effectively moving away from controversy to complexity.

In sum, the studies conducted by Ericsson and his colleagues furthered understanding into people's potential and should be credited for questioning assumed limits and trying to identify an objective tool to measure performance, namely the expert-performance framework. Research in this domain showed that expertise does not just rely on more knowledge, but on better organised and connected knowledge. Ultimately, the framework helped shed further light on the complexity of human learning. On reflection, the nature-or-nurture controversy may be an unnecessary dichotomy. In this regard, Setton and Dawrant argue that interpreting involves

> […] a complex mix of ingredients – language, analysis, empathy, knowledge and technical skills – that for best results should be stirred into expertise by teachers and students working together: interpreters are both born *and* made (2014:xxi).

6.2 Reflection on the deliberate practice model

The critiques broadly illustrated in the previous chapter do not seem to challenge the absolute value of deliberate practice per se, but rather its relative value in relation to elite performance. Even scholars in favour of the 'giftedness' view do agree that talent requires development in the form of hard work. Therefore, it seems reasonable to assume that deliberate practice may still be a potentially valid approach to training in an educational setting, namely in an interpreting programme, which is the interest of this paper.

The deliberate practice approach provides a structured approach to training. This is essential as, given the effort required in acquiring interpreting skills, practice needs to be effective and not a haphazard process. Furthermore, it is worth bearing in mind that the overarching aim is to have an effective skill acquisition model. Miller et al.'s matter-of-fact observations on deliberate practice (DP) seem fairly pertinent:

> Notwithstanding, of the many factors discussed in the expertise literature, DP represents one strategy performers can design and implement. In the end, the question that matters most is what any one person can do with what they are given (e.g. genetic makeup, time, money, access to teachers, etc.), to better their performance (2018:3).

There may also be another aspect worth considering before moving onto thoughts on the ST module, namely learners' beliefs about learning and, crucially, their ability to cope with setbacks. Deliberate practice acts as a guide on how to train meaningfully and what to do when

faced with failure, though it does not tell learners how to interpret failure. Knowing how to do so may be beneficial, as the way students react to failure may have implications in learning. Changing learners' perception of difficulty may instead modify their approach to the least pleasant sides of deliberate practice, such as focusing on weaknesses, pushing past one's comfort zone and putting in great effort in doing so to improve performance (cf. 2.3). As much as learners may also welcome challenges, skill acquisition in interpreting is a journey spanning across months, at the very least. Acknowledging and accepting the fact that failure is inevitably part of a skill acquisition journey would promote learners' motivation and self-image, though this needs to be followed by a focus on the root cause of difficulties. In this regard, it is worth noting studies that discuss students' beliefs about learning and the effect of focusing attention on the effort a task demands as opposed to focusing on the ability to perform a task (Black & William, 1998). In other words, believing that effort can lead to success, rather than thinking that failure reflects inability. Perhaps greater awareness of the nature of learning may help students change their assumptions about it. If one were to seek individual differences as predictors of success, attitude and motivation may be an area where they may be relevant.

6.3 Reflection on the ST module

Interpreting programmes have a strong vocational focus due to the very nature of the profession, so practice is inevitably a crucial part of an interpreting curriculum. The ST module is effective in this regard, in that it allocates time and provides learners with the premises to engage in practice. It also enables educators to put in place an instructional tool with rules to guide students through deliberate practice as part of a group. As pointed out earlier (cf. 4.2.1), a structured model is essential to ensure effectiveness, as discussed in detail by Motta (2013). The observations below will touch upon the ST module's learning constructs and group behaviour by examining the main themes that emerged during the student's reflection.

6.3.1 Collaborative learning

Broadly speaking, ST groups fall within the definition of collaborative learning provided by Cohen, in that it refers to

> students working together in a group small enough that everyone can participate on a collective task that has been clearly assigned. Moreover, students are expected to carry out their task without direct and immediate supervision of the teacher (1994:3).

Moreover, Supervised Training groups form a "community of practice" (cf. 3.3) and provide the opportunity to train with learning peers, who can

> help us check our understanding, see alternative ways of interpreting a task or situation, act as a sounding board for our ideas, provide support when we are feeling low, to identify new sources of information, and to provide other views and judgements (Boud, 2000:11).

In the same vein, ST sessions provide ample opportunities to exchange ideas, offer different perspectives, knowledge and support when struggling with skill acquisition. The underlying idea is to improve the performance of individual members through group collaboration, peer scaffolding and modelling, which the ST groups seem to do. They would also appear to help ensure students become independent learners. Moreover, given that teaching in master and language pair classes moves constantly forward, group practice is a welcome opportunity to consolidate knowledge and skills, as no new challenges are introduced.

6.3.2 Peer assessment and self-assessment

The materials provided to students (cf. 4.2.1.1) proved to be effective in guiding students on how to provide, and to some extent receive, feedback. The ELPs were an essential touchstone in this sense for speakers, interpreters and at the feedback stage. Incidentally, the written assessment provided by TAs on the interpreting department's platform TR@IN proved to be very useful as well, in that it is a permanent record students' can go back to it to review their goals and track progress. In group practice students have the opportunity to internalise metacognitive and self-monitoring skills, compare their own performance analysis with that of their peers acting as a model and adjust their self-assessment in subsequent sessions, with the ultimate goal of becoming autonomous learners. Along with peer and self-evaluation, there seems to be another interactive element involved in ST sessions, i.e. reflective practice with peers in the form of group discussions following feedback.

Having said that, students may not always be able to discern major issues from minor ones when providing feedback to themselves or to peers. This may be reflective of the fact that

students are not as good as more expert individuals – TAs and instructors – in assessing performance. Moreover, not all students may grasp the idea of commenting on general trends rather than dwelling on individual errors.

Group discussion may help provide different points of view, though in part they are inevitably hindered in instances where students lack sufficient familiarity with both the source and target language. The presence of TAs seemed to be useful in this regard, as they would provide context together with feedback on performance. For instance, by acknowledging when a speech was effectively too challenging in relation to the required skill acquisition stage.

As for students' view of their learning pathway, it may be worth directing their attention to the need to view group practice as a learning continuum in which they also need to look back at previous goals and strategies rather than regarding ST as a series of individual sessions. As pointed out by Motta, "learning is a continuous process rather than a series of isolated and perhaps unrelated lessons and practice sessions" (2013:183). This also involves bearing in mind that feedback is a key element of said process and informs past, present and future practice sessions. Students were invited to keep a learning journal and this may help in this sense. For instance, by setting the same objective for one or more sessions, students are given the opportunity to apply the results of previous feedback from peers and see if any improvements have been made and whether feedback was effective. Moreover, it forces students to think about their learning and express their ideas in their own words, thereby fostering understanding. Also promoting the use of a template may help. The author designed a custom one to give structure to self-assessment during individual practice, initially for training in consecutive mode. It proved to be useful in that it helped think about all the required aspects of assessment, though it initially lacked key elements in light of the learning principles covered in Chapter 3: how to go about working on weaknesses, as well as a follow-up on my previous goals and strategies, namely which worked or did not work and *why*.

There was an additional element missing in said custom practice sheet, i.e. what went well during the interpretation. This is something eventually implemented by integrating colour-coding on consecutive notes following feedback from peers and when re-listening to speeches for more detailed analysis during individual practice. The idea was to provide positive reinforcement when faced with setbacks. This was subsequently followed by a more detailed template using a form available on the Airtable platform to track progress. Although meant for

collaborative purposes, in this case it was mainly used as an online spreadsheet and chosen over other similar tools because of its interface and the option of viewing entries in the form of a chart. The idea would be to view how much time was devoted to each language pair and what the main issues were at a glance. It acted as a useful reminder to direct effort where needed.

6.3.3 Group dynamics

ST groups would seem to feature a relationship of reciprocal interdependence among group members whereby "each student is responsible for helping to ensure the success of all members. Each student has a role that has to do with the functioning of the group" (Cohen, 1994:8). Indeed, learners are invited to work as a team, rather than act as single individuals part of a group. This emerges throughout the various stages of an ST session, in which each member 'works' for other members in a number of ways:

- by preparing a speech in line with the ELPs and any specific requests the student(s) due to interpret may have (for instance if they intend to work on numbers or speed). Students with a given A or B language are tasked with preparing speeches for other group members who will be interpreting from those languages, thereby effectively providing other students with training material. As group members take turns in preparing speeches, their roles as speaker and interpreter are switched over as well;
- by taking turns in looking after the weekly admin to plan sessions and showing a cooperative attitude in this regard;
- by providing feedback in line with the guidelines provided;
- by promoting an atmosphere where each student feels valued and supported by other group members.

Although the idea is to cooperate according to everyone's needs, not all students may be able to display the same level of commitment to the above and this may lead to tension and frustration within the group. It would seem that those who have not yet fully developed team-working skills may not succeed in fully understanding the importance of cooperating within a group. A possible explanation for this may be that initially students are likely to be unfamiliar

with group practice as designed within the FTI's interpreting programme and, as they advance through the programme, they may not be aware of their lack of ability in this area.

6.3.4 Group members' engagement

The ST groups are self-managed by design, which is positive in that learners have free rein to explore and experiment with learning strategies. However, some drawbacks may emerge too. The lack of marks and the absence of instructors may lead students to perceive ST as a less valuable module requiring less effort compared to formal classroom hours or even as a module eating into time for individual practice. This means that students may struggle to fully recognise the value of the ST module in light of deliberate practice principles and the socio-constructivist approach, as well as the fact of being a mandatory part of the programme's curriculum. Yet, the very lack of marks is meant to let students freely explore strategies and has the merit of shifting the focus from performance to learning (Black & Wiliam, 1998) – at least to some extent, as students will still need to perform in front of their peers.

According to Lave and Wenger, group members' engagement fosters learning, as "the effectiveness of the circulation of information among peers suggests [...] that engaging in practice, rather than being its object, may well be a condition for the effectiveness of learning" (1991:93). If learners do not view ST sessions as a priority, this may affect group cohesion, satisfaction and motivation, all of which would seem to be relevant in effective group practice. In this regard, 'free-riding' may emerge as well, whereby learners are primarily concerned with maximising benefits they can draw for themselves over their contribution to the group.

Dealing with group behaviour is a delicate and complex affair and this paper only touches upon some aspects due to its scope and to avoid oversimplification. However, the issue of group 'equity' in the form of the same benefits for and contributions from all group members remains. Open communication between group members may help and may be useful in learning how to use confrontation constructively (Davies, 2009). Another solution may be making sure learners are aware of their role within a group. In drawing on the previous sub-section, this would mean realising that providing suitable practice material to other group members, ensuring everyone has an opportunity to interpret and taking turns in taking on group responsibilities is required

rather than desirable. Alternatively, increasing TA presence may be helpful to provide greater guidance.

Group behaviour difficulties appear to result from the dilemma between reaching individuals goals (skill acquisition) and helping other students achieve theirs by contributing to the group. It would seem worthwhile considering the above aspects as they may undermine learner motivation and ultimately shift the nature of the group from a community of practice (cf. 3.3) to a set of learners required to meet in the same room to practice. This would be unfortunate, as ST sessions are potentially truly valuable learning opportunities and when social cohesion is fully achieved a group is able to become a team.

6.4 Suggested improvements

As mentioned, this paper may be viewed as a broad investigation focusing on the learner's view of the Supervised Training module. Ultimately, the crux of the matter would lie in understanding whether deliberate practice in a group setting with peers, as featured in the ST module, promotes skill acquisition for interpreting students, especially once metacognitive skills have been developed. It clearly has the benefits identified by Davies (2009), in that it promotes 'deep' as opposed to 'surface' learning, as well as 'active' as opposed to 'passive' learning. Therefore, the instructional tool per se appears to be effective, though it requires commitment and understanding by learners. Commitment would come in the form of undertaking to follow the guidelines to make the group work. Understanding refers to perhaps greater familiarity with the conceptual framework underlying skill acquisition in the ST module. As Gile argues,

> it seems reasonable to expect a modest amount of theory in the classroom to be helpful, insofar as it places various phenomena encountered by students, as well as strategies recommended by instructors, in a cohesive conceptual framework (Gile, 2005 as cited in Aldea, 2008:97).

Students may also benefit from greater awareness of the stages involved in developing expertise and the potential resulting U-shaped trajectory (cf. Chapter 3). The socio-constructivist view whereby students build their own knowledge and are responsible for their learning may be novel to students and this may be an area where further guidance is needed during the initial stages of the programme.

There may be a certain difficulty for interpreting students in learning to learn and developing metacognitive skills, defined by Motta as "the learners' ability to identify a problem to be solved, construct a mental representation of it, and use this as a basis for deciding how to proceed in order to find a solution and evaluate the process" (2013:298). Equally important is self-regulation, in particular the ability to identify the right strategy to tackle a difficulty, monitor the use of said strategy (ibid.). One area that may benefit from additional guidance would be fostering the development of meta-cognition as part of group practice. This is not an obvious skill to learn and it may not be enough to know what metacognition is to then be able to engage in it. With group practice, students may view the product of other students' metacognition, though they may not always see the process as learners themselves may comment on the product rather than on the process. This would refer to how other students think about their learning, i.e. how they metacognitively engage in it. Group practice does give learners the chance to explain their reasoning to their peers, which fosters meta-cognitive development, and benefit from other students' reasoning. However, this may be easier said than done for students, who are likely to be unfamiliar with meta-cognition. TA guidance was useful in this sense. A very effective way of helping students engage with meta-cognition was asking them how they would go about achieving their objective after they had set it and before the delivery of the speech. In their reply, students would have to explain their strategy and, in doing so, acquire greater awareness about it. This would usually involve a very brief discussion, so it did not prove to be time-consuming. The above question seemed to be a simple and effective contribution to help students think about how to do what they set out to do. It may be viewed as internally moving from a declarative view of goal achievement to a procedural one, or at least it helps students move towards a deeper approach to learning in which they meaningfully engage with it.

All in all, the module helped students learn the ropes of deliberate practice together with other students with the ultimate goal of becoming autonomous learners, i.e. being able to keep on honing their skills after graduating to go beyond the 'journeyman' level.

7. CONCLUSIONS

The aim of this dissertation was to explore the evolution and implementation of the expertise and deliberate practice approach to interpreter training, along with a critical reflection from a student's point of view. A brief review of existing literature revealed that research has long argued for the decisive role of innate talent in achieving elite levels, though subsequent studies rejected this view, arguing that it lacked the hard evidence to substantiate it. This served as the starting point for the expert-performance framework that Ericsson helped pioneer. It assumes that purposeful practice, along with favourable conditions, are the determinants to attain expertise. Based on the above, the scholar devised the deliberate practice model, which focused on the *quality*, rather than the *quantity*, of practice. The paper subsequently turned to the relevant learning principles and models to provide the context to address expertise and deliberate practice in interpreter education. It moved on to illustrating learners' skill acquisition trajectory, the fundamental constructs involved in learning and the sociological side of the process. Further, expertise and deliberate practice were examined in the context of interpreting research and pedagogy, including the FTI's Supervised Training module. The dissertation then explored critiques to Ericsson's theory and training model and, lastly, it presented the student's viewpoint on all of the above.

In examining research for this paper, my own point of view as an interpreting student shifted more than once. I initially agreed with Ericsson's point of view on expertise, perhaps because of its "meritocratic appeal – the implication that nearly anyone can become an expert with enough hard work" (Hambrick et al., 2014b:35). Moreover, the scholar designed a clear remit for the study of expertise, he meticulously examined pertinent studies and delved deep into the cognitive aspects known at the time in his investigations. Yet, the at-times harsh criticism prompted by his theory does seem to be reasonably founded and expertise appears to be an even more complex matter. Although the extent to which the author is currently able to assess the soundness of the statistical side of the critiques is limited, the arguments presented in Chapter 5 do seem to hold. In this respect, the multifactorial approach to expertise would seem a viable proposition, though the expert-performance framework did shed light on the whole trajectory leading to remarkable achievements. All in all, while some individuals may have more

– perhaps inborn – potential to tap into, they will still need to work hard to reach elite performance levels. In the context of interpreter training, it would seem more edifying to turn to how to best complete the journey from novice to journeyman, i.e. from the interpreting student who has just enrolled on a programme to the graduate ready for their first day of work. After all, the cognitive psychological approach to expertise should direct to practical implications (Hoffman, 1998), which herein would be skill acquisition practice to attain professional competence.

With regard to deliberate practice, based on the author's experience within the context of ST sessions, it proved to be a valid skill acquisition model for interpreters. As designed within the interpreting programme at the FTI, it provides a structured approach to ensure effective practice. Doing so as part of a group offers a valuable perspective and fosters collaborative learning, scaffolding, modelling, self-regulation and autonomous learning. It is also a valid way to promote metacognition, though this aspect may need further attention, as unlike other constructs, it would seem that enquiring into one's cognition is not necessarily an obvious skill to develop. It takes a conscious effort to do so, though peer feedback – when effective – can help acquire it. However, once mastered, it is an effective skill acquisition tool in interpreter training.

Concerning the ST module, the blueprint based on deliberate practice was found to be effective. Nonetheless, it may be somewhat hindered by learners' inability to engage in collaborative learning, a group's internal dynamics and student's low engagement. This is why learners may benefit from greater awareness of the module's underlying theoretical framework. Knowing why the module is designed in a certain way may foster students' commitment and cooperation – typically, when faced with the dilemma between individual and collective goals (cf. 6.3.4). It would also have positive repercussions on their learning process, namely on meta-cognition and self-regulation, and may help students realise they are an integral part of the interpreting process. This aspect has also been highlighted by Motta (2013) and may merit greater attention. While the pedagogical approach of the ST module is mentioned during the introduction to the course across the three semesters and in the online module available in the interpreting department's platform TR@IN, it may need to be further integrated into the programme. This could be done either with a refresher during the second and third semesters, as suggested by Motta (ibid.) or during the TAs' feedback to students during practice sessions or online, even in the form of a brief question to foster thinking. In the latter case, the idea would be

to emphasise the purpose of prompts to make learners think about their learning process, rather than spoon-feed them. Ideally, said prompts would act as a model students would then apply during self-directed sessions and eventually internalise. This may already occur, though it may need to be further stressed. Ultimately, students may benefit from greater attention to the notion that interpreting is also the result of reflective practice, as well as actual practice.

As much as the above observations are limited to the author's experience and, as such, are not immediately generalisable, they may still offer valuable insight for considerations on the hidden curriculum (cf. Chapter 6). In further research, it may be interesting to survey students' opinions in light of the above observations. Would a larger group of students feel they would benefit from greater familiarity with ST's underlying theory? Or, simply put, knowing why the module is designed as it is? Another option worth considering is providing targeted 'snippets' of theory if group members' show low collaboration, engagement or experience poor group dynamics. Moreover, it may be worth investigating the student's viewpoint on other modules of an interpreting programme and juxtaposing it with their pedagogical principles and models.

In sum, skill acquisition is a complex process. Having the right tools at hand and knowing more about *why* they are used as well as *how* to use them can help make a difference in group practice and along the yellow brick road of learning.

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9. APPENDICES

9.1 Appendix 1: Feedback guidelines

Feedback Guidelines

Here's a set of six feedback guidelines including those expressed in the module and some other elements as well – keep these handy and use them in conjunction with whatever your institution recommends!

1. **Feedback must be framed by three questions:**
   i. What is the ultimate goal?
   ii. How is progress being made towards it?
   iii. What are the next steps to take?
2. **Feedback must focus on objectives:**
   i. Listen to the interpreters' objectives *before* they start interpreting and bear them in mind while listening.
   ii. Listen to the interpreters' self-evaluations before you comment to *contextualise* your comments.
   iii. Keep in mind the overarching objectives of *fidelity, expression / style, and presentation*.
3. **Feedback must help foster progress:**
   i. Mention positive elements of the performance as well; feedback should be motivating, not demotivating.
   ii. We'll be more inclined to listen to and believe feedback if we think it encourages us to do better next time, so try not to end your comments on an overly negative note.
   iii. Try to identify trends as well as correcting errors specific to one exercise.
4. **Feedback must be clear and efficient:**
   i. Don't repeat points others have made.
   ii. Make sure you're accurate in your comments.
   iii. Be decisive in your language, don't use ambiguous terms, and be able to explain your points and give examples.
5. **Feedback must be a respectful dialogue:**
   i. Ask the interpreter about their performance rather than droning on.
   ii. Leave out personal comments about the interpreters. They have nothing to do with the performance.
   iii. Try not to react badly to feedback you disagree with – discuss it, don't get aggressive.
6. **Feedback must be considered reciprocally:**
   i. Does feedback *you* give cover points you'd like to hear in feedback from others?
   ii. Do you prefer to receive honest feedback, or feedback influenced by your friendships?
   iii. Would you clearly understand what you express in your feedback to others?

9.2 Appendix 2: Consecutive interpreting ELPs

CONSECUTIVE

Weeks (1-14)	**Desired outcome** (cumulative)	**Required skills** (cumulative)	**Focus**
1-2 by the end of September	**Student is able to:** Tell the story: - naturally - main ideas in place Render overall message coherently	Identifying and following the main argument(s) Chunking information Summarizing Structuring production Communicating message to audience	Identify main ideas Natural delivery *Memory (no notes)*
	+	+	
3-4 by mid-October	**Student is able to:** Render main ideas & logical structure Summarize when details are missing while preserving message integrity	Differentiating main/secondary ideas Understanding/anticipating discourse structure Identifying explicit/implicit links	Identifying logical structure & recreating that structure during production Confident delivery *Conceptual notes*
	+	+	
5-6 by the end of October	**Student is able to:** Apply elementary note-taking skills to prompt memory Develop own system of notes	Deciding what to commit to memory, what to notes Deciding whether to use an abbreviation or a symbol	Elementary note-taking skills Render ideas and links *Basic notes*
	+	+	
7-12 by mid-December	**Student is able to:** Use more complex, structured notes Render main and secondary ideas & logical structure	Structuring notes (layout, margins) Encoding info in symbols/ abbrev. Decoding info from symbols/abbrev.	Use complex notes Render details *More complex notes*
	=	=	
13-14 by the end of the 1st semester	**Student is able to:** Deliver with confidence (public speaking skills and "meeting room management") while preserving message integrity	Making use of voice as tool to preserve message integrity Maintaining eye-contact	Integration of fundamental consecutive skills Managing audience Stamina

Weeks (15-28)	Desired outcome	Required skills	Focus
15-16 by the end of February	**Student is able to:** Interpret syntactically and semantically more complex materials at moderate pace	Applying consolidated skills to less predictable discourse	Authentic materials
	+	+	
17-20 by the end of March	**Student is able to:** Interpret syntactically and semantically more complex materials at moderate pace: general topics	Using appropriate and idiomatic style, respecting register	Register Style
	+	+	
21-24 by the end of April	**Student is able to:** Interpret syntactically and semantically more complex materials at moderate pace: specialized topics	Preparation skills Understanding specialized context (gauging output/audience) Managing multiple difficulties (basic recovery strategies)	Specialized topics Terminology Phraseology
	=	=	
25-28 by the end of the 2nd semester	**Student is able to:** Perform at (basic) professional level Interpret materials of high complexity presented a fast pace	*All of the above*	Integration of skills
3rd semester	**Student is able to furnish professional quality**		Professional performance

9.3 Appendix 3: Simultaneous interpreting ELPs

SIMULTANEOUS

Weeks (1-14)	**Desired outcome** (cumulative)	**Required skills** (cumulative)	**Focus**
1 by the end of February	**Student is able to:** Understand the mechanics of SI Understand the equipment	Self-reflection Public speaking	Elementary processes of SI Message
	+	+	
2-5 by the end of March	**Student is able to:** Produce coherent meaning Produce simultaneous output Interpret well-structured narratives on familiar topics Monitor meaning/logic of own output Review own performance for coherence/faithfulness	Analyzing structure and meaning Simultaneous speaking and listening Shifting attention as necessary	Message Comprehension & Production Rendering the meaning Basic monitoring for meaning/coherence
	+	+	
6-9 by the end of April	**Student is able to:** Interpret well-structured but unfamiliar materials Manage more sustained input speeds	Prioritizing information Identifying appropriate strategies for unfamiliar materials and higher input speeds Stalling, specifying, generalizing	Managing the unknown and unexpected Increase in input speed
	+	+	
10-12 by mid-May	**Student is able to:** Interpret syntactically and semantically more complex materials Deal with common accents non-/native.	Preparing a topic/meeting/conference Shifting attention to/from aids in booth (glossaries etc.) Adaptive use of strategies	More complex arguments Common accents
	+	+	
13-14 by the end of May	**Student is able to:** Produce fluent, coherent, idiomatic output of syntactically and semantically more complex materials	Reformulating Ability to monitor own output	Style
	=	=	
14 by the end of the 2nd semester	**Student is able to:** Understand the mechanics of SimTXT (incl. text preparation) Behave professionally in the booth	*All of the above*	Booth manners

Weeks (15-28)	**Desired outcome** (cumulative)	**Required skills** (cumulative)	**Focus**
15-16 by the end of September	**Student is able to:** Use comfortably all the skills acquired up to week 14 Prepare a text for SimTXT Work in a team (microphone handover, help with terminology and documents)	Rapid text analysis and annotation Identifying problem triggers Integrating visual information with auditory input (Use of PowerPoint by speaker)	Working with text and other visual input Coordination of information coming from different sources
	+	+	
17-20 by the end of October	**Student is able to:** Interpret longer and more complex and argumentative input faithfully, fluently and coherently Interpret presentations with visual aids (PPT, speaking notes etc.)	Stress management Resource management Recovering from breakdowns Stamina Ability to rapidly select relevant information (spoken/written)	Stamina and resilience
	+	+	
21-24 by the end of November	**Student is able to:** Reliably adapt strategy to speaker and to evolving discourse Interpret read manuscripts	Selecting appropriate strategies and shifting strategies as needed	Different strategies for different speakers
	=	=	
25-28 by the end of the 3rd semester	**Student is able to:** Perform at (basic) professional level	*All of the above*	Presentation Professional performance