

How Do Tax Accountants Develop Technical-Tax Expertise? A Grounded  
Theory Study

A Dissertation

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**Dedication**

To Bill, Daniel, Peter, Shirley, and Eve.

## Abstract

This qualitative, grounded theory methodology study focuses on how tax professionals develop technical-tax expertise. The literature review, which examined expertise literature from 1869 through 2010, supports the assertion that expertise is learned over an extended period of time with appropriate types of practice. The expertise literature addresses the difficulty in distinguishing experts from experienced non-experts and suggests criteria that can be used to identify experts. The literature surrounding grounded theory methodology is explored including the history of grounded theory, the key elements of a grounded theory study, and a comparison of the Glaser and Strauss/Corbin methods.

In the study, nine technical-tax experts, and three tax professionals who self-identified as non-experts were interviewed regarding their experience in developing technical-tax expertise. At first glance, these experts would appear to have little in common; however, under the surface, they had remarkably similar personal attributes—intelligence matched to the discipline, willingness to work hard, fascination with taxation, and tolerance of ambiguity. In addition, the environmental factors they faced (e.g. the economy, the U.S. tax laws, and the type of firm in which they were employed), helped explain the ease or difficulty they had in developing their expertise. Thus, their personal attributes made it likely that they would both excel and enjoy tax research and the environmental factors they faced either supported or impeded their opportunities to conduct tax research. The study concluded with the following three, interconnected theories on how professionals develop technical-tax expertise:

- Theory 1: Professionals learn to be experts (progressing on the skill continuum from novice to expert) by engaging in progressive problem solving. For tax professionals, progressive problem solving occurs from conducting research to address real-work tax issues.
- Theory 2: For each incident of tax research, the increase on the skill continuum is a function of knowledge and effort.  
Increase on the skill continuum =  $f(\text{knowledge} \times \text{effort})$ .
- Theory 3: To gain expertise, a professional must repeatedly conduct research to address real-world tax issues. Tax professional will repeatedly engage in tax research to the extent they have the desire and opportunity.

Keywords: tax accounting, expertise, expert performance, grounded theory

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## Chapter One Problem Statement

Tax accountants begin their careers after completing a bachelor's degree, master's degree or law degree. Depending on their academic program, they may have a theoretical background in accounting and, perhaps, an understanding of the structure of tax law. While their theoretical background in taxation is minimal, their practical experience is virtually nonexistent. Unless they had an internship in a tax department as part of their accounting program, they may never have prepared a tax return. Even if they completed an internship, they are unlikely to have conducted tax research or prepared tax memoranda. Therefore, most tax accountants enter the profession in a *fetal* state—they are not quite ready to survive even as a novice. Their initial professional preparation is not complete until their first job provides practical experience and on-the-job training.

After years of experience, some (but not all) of these tax professionals will develop an expertise in taxation. As expert tax professionals, they are able to understand the complex and ever-changing tax code, they can advise their clients on meeting current requirements, and they can help their clients structure individual or business transactions to both meet future goals and minimize their tax burden. However, there is no underlying theory describing how tax accountants develop expertise: What combination of academic preparation, formal training programs in the workplace, on-the-job training, mentoring, job assignments, and other unidentified processes lead to tax expertise?

## **Academic Curriculum and Internships**

A review of the requirements of five respected college accounting programs (“Brigham Young University,” 2012; “University of Illinois,” 2012; “University of Minnesota,” 2012; “University of Texas at Austin,” 2012; and “University of Wisconsin,” 2012) revealed that all five universities require one tax course to earn an undergraduate accounting degree. In addition, all of the colleges offer masters degrees to meet the American Institute of Certified Public Accountants’ (AICPA) 150-hour requirement to sit for the CPA exam. Students in these masters programs who plan to become tax accountants could take from three to as many as nine additional tax courses. However, this additional tax coursework would not result in experience in the practical aspects of tax accounting.

Since academic tax education focuses on tax theory, real-world, hands-on experience is primarily gained through an internship (Albrecht & Sack, 2000). “The internship experience is intended to provide participants with substantive learning opportunities in areas of professional knowledge and interaction in the business environment” (Siegel, Blackwood, & Landy, 2010, p. 52). Therefore, students do have an opportunity to gain professional experience from internships, but this experience is minimal since internships are of fairly short duration—typically three months (Beard, 2007). In large part, internships allow students to confirm their choice of tax accounting as a career and to enhance their employment prospects. For employers, internships provide a means of staffing during busy season as well as the opportunity to *audition* future employees (Siegel, Blackwood, & Landy, 2010). Thus, even students who have

completed high-quality academic tax programs and have participated in internships will have limited technical tax knowledge and minimal practical experience. Therefore, they begin their professional careers as novices.

### **Training and Development in the Workplace**

Novice tax accountants in high-quality CPA firms will receive additional tax education, formal and informal training, mentoring from more experienced professionals, as well as the opportunity to work on client issues. Accounting firms take training their professionals—including their tax professionals—very seriously. In 2011, all four of the Big Four CPA firms (Deloitte, KMPG, PricewaterhouseCoopers, and Ernst & Young) were included in *Training* magazine's top ten hall of fame ("*Training* top 10," 2011). Inclusion in *Training*'s hall of fame requires that an organization's training function be ranked in the top ten of all United States business training programs in four consecutive years (only seven other companies have been named to this hall of fame).

The Big Four have enormous training departments. Deloitte opened a \$300 million training facility in Texas in October 2011.

About 35,000 Deloitte employees will visit Deloitte University each year, spending three to five days at the facility per trip. The company expects to conduct 4 million hours of training throughout the firm next year, including about 1 million hours at Deloitte University (Hethcock, 2011).

In 2009, Ernst & Young spent \$450 million worldwide on training and development (Dizik, 2009). However, while these firms make enormous investments in training and development, they are also very cost conscious. PricewaterhouseCoopers

was named to the number one spot of Training Magazine's Top 125 (the third time they finished in first place in three years) in 2010 while cutting their training costs by \$64 million from the previous year (Freifeld, 2010).

Thus, CPA firms strive to provide world-class training in a fiscally prudent manner. Human resource development (HRD) professionals in CPA firms need to ensure that training and development programs provide training for current job responsibilities while also creating an environment that encourages the development of future expertise.

### **The Need for Expertise**

Literature indicates that experts not only solve problems more quickly than non-experts, but experts are able to address problems that are beyond the capability of non-experts. While non-experts are able to handle structured problems—clearly defined problems with a given solution and protocol, they are less capable of handling unstructured problems. An unstructured problem is one in which the question may not be clear, there is not a single solution, and there are no set procedures to follow. A key difference between an expert and a non-expert is that an expert can sort through ambiguous facts, identify the issue, and select a solution. In other words, experts can identify and solve unstructured problems (Bereiter & Scardamalia, 1993; Dreyfus & Dreyfus, 1986; Ericsson & Smith, 1991).

Developing expertise in taxation is important to tax accountants because sophisticated tax issues are classic, unstructured problems. Clients may have misidentified their tax issue or may be blithely unaware of a significant tax problem. In addition, the tax expert may need to probe beyond the initial facts to determine whether

there is a tax issue or opportunity. A non-expert will examine what is contained in the supporting documents, past tax returns, and financial statements, but the expert may also question what is not there. The expert tax professional is able to sort through complicated fact patterns, identify issues, generate alternatives, and recommend the optimal solution for the client (Davis & Solomon, 1989). Experts may appear to have a *sixth sense* when identifying an unstructured problem—somehow they know to ask additional questions or search for other documents to diagnose the issue.

Although expertise is required to handle complex, unstructured tax issues, limited research has been conducted on expertise in the field of tax accounting. Roberts (1998) reviewed literature on tax accountants' judgment/decision making (JDM), a hallmark of tax accounting. Research shows that experience is related to JDM; however, general experience is not relevant—only task-specific experience. Bonner, Davis, and Jackson (1992) studied the ability to use declarative (theoretical knowledge) and practical knowledge to identify tax issues. They suggest that issue identification, a first step in tax planning, requires the integration of the theoretical and practical knowledge. Cloyd (1995) studied the impact that prior knowledge had on how tax accountants conducted tax research. He found that prior knowledge (experience) affected the research strategy, the amount of relevant information identified, and the ability to distinguish relevant and non-relevant information. Individuals with more prior knowledge were more efficient and effective in conducting tax research.

Additional research in the development of expertise is found in auditing and accounting. While auditing/accounting and tax accounting are related disciplines, there

are significant differences between these practice areas. For example, auditors must maintain independence from their clients while tax accountants may advocate for their clients. Tax accounting work requires forward reasoning—from symptoms (facts) to diagnosis (tax recommendation). Auditors generally gather and analyze data from past transactions (Bonner et. al., 1992). Auditors and tax accountants both require expertise, but tax expertise would not translate into audit expertise and vice versa. However, despite the differences between auditing and tax, they do share some domain knowledge; therefore, the following research in accounting and auditing expertise has relevance to tax accountants.

Choo (1989) reviewed general expertise literature as well as accounting-specific studies and concluded that elements of expert performance (e.g., expert ability to conceptualize holistically and superior performance with unstructured problems) are relevant to accounting practice. In other words, having expertise is valuable to accounting professionals. Colbert (1989) reviewed studies of auditor judgment and suggested that “experience may be vital for complex or unstructured decisions, but not significant for relatively simple, structured judgments” (p. 148). Albrecht and Sack (2000) noted that due to changes in technology, routine, structured work is less likely to be performed by professional accountants. Accountants need to be able to handle the complex, non-routine issues. Bouwman (1982) conducted a study comparing the process that experienced versus inexperienced accountants used in financial statement analysis, an unstructured problem. The less-experienced accountants approached the analysis on a piece-meal basis while the more-experienced professionals addressed the problem

holistically. Thus, the more experienced professionals tended to approach the problem differently and more effectively than their less-experienced brethren. Davis and Solomon (1989) studied the effect of experience and expertise on expert performance in public accounting firms. They noted that “repeated personal encounters with or performance of a particular activity over time does not necessarily provide one with the level of knowledge and skill necessary for expert performance” (p.159).

Just as in taxation, audit and accounting professionals need expertise to address complex, unstructured problems. Because of changes in technology, professionals will increasingly focus on the non-routine, unstructured problems. In addition, professionals who repeatedly do the same work and the same complexity of work are unlikely to develop expertise. Therefore, the development of expertise requires not just experience, but years of appropriate experience.

### **Importance of Developing Expertise**

Developing professionals with expertise in taxation is important to the accounting profession, to clients, to CPA firms, to educational institutions, to the individual professional, and to human resource development professionals. The trust and legitimacy of the tax profession is tied to the ability to provide sound, ethical, advice; and, to provide this level of advice requires deep expertise in taxation. Giving good tax advice means understanding the client’s business or personal situation as well as understanding the complexity of the tax code. The tax professional needs to be a business advisor not merely an expert in taxation (Hite, Hasseldine, Al-Khoury, James, Tuomi, 2003). The tax environment presents unstructured problems—you cannot use a predetermined

formula or decision tree to arrive at the *correct* decision. There may not be a single correct decision although there are a number of incorrect answers. In addition, the decision criteria are not stable—the tax law will be amended, new cases will be decided, the economy will move through unpredictable cycles, and the client’s needs and objectives will also change (Bonner, Davis, & Jackson, 1992). Navigating this complex environment requires the sophisticated understanding of a tax expert. When poor client advice is given (which can lead to fines or even imprisonment), the trust in the entire profession is diminished.

CPA firms are especially interested in better understanding how tax expertise develops. First, tax experts provide a higher level of client service which leads to higher revenue in the present and to the likelihood of additional business in the future. In addition, training and development (T&D) expenditures are major costs for firms (Freifield, 2010; Hethcock, 2011). Professionals are required to complete continuing professional education (CPE); however, these expenditures are too large to be relegated to compliance alone (“AICPA membership,” 2012). Firms should not waste resources, but instead need to structure their formal learning, on-the-job training, staff assignments, and mentoring to promote the development of expertise. In addition, developing staff is seen as a key strategic initiative for the next ten years. Keller and Crosley (2011) asked a number of public accounting professionals to forecast the key initiatives in the next decade. The overwhelming sentiment was “[t]he winning firms will be the ones who have refocused, and strongly, on finding, hiring, developing, and retaining the best

people. Firms that really become winners at developing and keeping them, will be basking in success” (2011, p. 40).

Educational institutions also have a stake in understanding how expertise is developed. Both undergraduate and graduate programs need to question whether their current curricula are designed to promote the development of expertise. In *Accounting Education: Charting a Perilous Future*, Albrecht and Sack (2000) address serious concerns with the structure of accounting education. They posit that if the higher education in accounting does not change to meet the needs of the profession, existing academic accounting programs will lose students to other disciplines as well as other types of educational institutions.

Individual professionals will benefit from understanding how to develop their personal tax expertise. This knowledge can determine which undergraduate or graduate program to attend, the selection of employer, as well as the day-to-day choices made in the workplace.

Finally, research in expertise is important to HRD professionals who support the learning and development programs for tax professionals. The Big Four firms, as well as, the second tier CPA firms have training functions tasked with supporting the development of tax professionals. These HRD professionals need to know *what works* in developing tax professionals so that they can effectively guide the strategic tax leadership to endorse training and development that is effective—rather than perpetuating programs that may be obsolete. To the extent that human resource development professionals promote the right programs and development opportunities to the right people at the right

time, they can ensure that training and development dollars are used effectively and efficiently.

### **My Professional/Academic Background**

Since I have a master's in taxation degree and am a CPA (inactive), I have both the academic and professional background in tax accounting. I became interested in understanding how tax professionals developed expertise from my almost ten years as director of tax education for a national CPA firm. Over those years, I had the opportunity to observe that with time and experience many tax professionals gained expertise; however, only a small percentage of tax professionals actually became technical-tax experts.

### **Research Problem**

Research indicates that expert tax practitioners are important to the profession. Clearly, developing expertise takes time and experience; however, many tax professionals with years of experience never develop expertise. Previous research does not identify how tax professionals become experts; therefore, there is a need for a study examining how individuals develop technical-tax expertise. The purpose of this study is to examine the journey from novice to expert in tax accounting.

### **Research Question**

The research question to be answered is: How do individuals develop technical-tax expertise?

## Chapter Two Literature Review

Why do some individuals exhibit higher levels of performance, creativity and achievement than their peers? The “study of expertise seeks to understand and account for what distinguishes outstanding individuals in a domain from less outstanding individuals, as well as from the population in general” (Ericsson & Smith, 1991, p. 2). According to Swanson and Holton (2009), expertise is a core concept of human resource development (HRD). Much of the work in HRD is concerned with “unleashing expertise for the purpose of improving performance” (p. 252). As noted in the previous section, expertise in tax accounting is important to the individual accountant, to clients, to the firm, to educational institutions, and to human resource professionals who design and oversee professional training and development for tax accountants.

### Overview of Chapter

This chapter includes a review of literature on expertise from 1869 to the present. My research process, which began with a Google Scholar search using the term “expertise,” identified three edited volumes: *The Nature of Expertise* (Chi, Glaser, & Farr, 1988); *Toward a General Theory of Expertise: Prospects and Limits* (Ericsson & Smith, 1991); and *The Cambridge Handbook of Expertise and Expert Performance* (Ericsson, 2006). From these edited books, I discovered key researchers in the area of expertise. I was able to follow their research and identify seminal work by Galton (1869) and de Groot (1965) as well track the progress of expertise research over the ensuing decades.

This chapter is organized in the following fashion: The review of literature begins with a definition of the terms expert, expertise, and expert performance. The next section examines the difficulty of identifying expertise—who is and who is not an expert. This section is followed by an examination of the development of expertise research from the mid-19<sup>th</sup> century to the present. Next, literature is reviewed to determine under what circumstances expert performance is superior to the performance of non-experts. The final section in this chapter links the literature on expertise to expert performance of tax accountants.

### **Defining Expertise**

This investigation into the nature of expertise begins with defining the terms: expert, expertise, and expert performance; clarifying the relationship among these concepts; and determining how to identify expertise. An expert is defined as “one with the special skill or knowledge representing mastery of a particular subject” (“Expert,” 2012). Expertise is defined as “the skill of an expert” (“Expertise,” 2012). In other words, experts have expertise in their fields. Expert performance and expertise are synonymous terms for the behavior of an expert. However, specifying that “experts have expertise” or that “experts exhibit expert performance” is a tautology and does not provide guidance on how to identify whether an individual is, in fact, an expert.

In many disciplines, expertise or expert performance is difficult to precisely define. For example, Holyoak (1992) describes an expert as “someone who does the right thing at the right time” (p. 309). The statement may be true, but is not very helpful in understanding the nature of expertise.

A number of researchers have indicated that experts must not only be skillful and knowledgeable in their domains, but they must be significantly more skillful and knowledgeable than others in their fields. Geisler (1994) stated, “At the heart of every expertise is a claim to the command of an arcane knowledge that goes beyond everyday understanding, that is, expertise is usually taken to be something more than mere competence in a domain” (p.53 ). According to van der Heijden (2002) “a person can only be referred to as an expert if his or her overt behavior demonstrates the capacity to perform quantitatively well in a particular domain” (p. 55). Ericsson and Smith (1991) specified that expert-level performance should be two standard deviations above the mean. Thus, experts are defined by what they *do* not just by what they *know* and they must perform significantly better than their peers. However, these definitions do not provide practical rules or guidelines for determining whether someone is an expert.

Ericsson, Prietula, and Cokely (2007) stated that *real* expertise must pass three tests. “First, it must lead to performance that is consistently superior to that of the expert’s peers. Second, real expertise produces concrete results...Finally, true expertise can be replicated and measured in the lab” (p. 118). However, Ericsson and Smith (1991) noted that “there are few instances of real life expertise in which superior performance can be demonstrated under relatively standard procedures” (p. 14). In other words, only a small subset of expert performance lends itself to testing in a lab. Most performance in the workplace cannot be studied in a lab and must be examined in the real world; hence, this definition of expertise is too restrictive for many business applications.

Clearly defining who is (and who is not) an expert has been problematic for research studies that seek to investigate expert performance in areas that do not have a clear demarcation between experts and non-experts. Shanteau, Weiss, Thomas, and Pounds (2002) identified nine criteria that have been used to identify expertise: experience, certification, social acclimation, consistency reliability, consensus reliability, discrimination ability, behavioral characteristics, knowledge tests, and creation of experts.

**Experience.** Experience is often used as a surrogate for expertise. For example, studies have defined experts as individuals with at least five years of experience in their fields (Benner, 1992, 2004; Pedin-McAlpine, 2000). Experience is necessary, but not sufficient to develop expertise. Many individuals have ten or more years of experience, but would not be considered experts—they perform adequately, but have not attained a level of excellence inherent in expertise. Ericsson (2006a) provided an example of the typical recreational golfer who golfs every week for decades, but never becomes more than a mediocre player. Similarly, many workers have been in their positions for many years, but have not developed the level of skill and knowledge to be categorized as an expert (Benner, 1982). Therefore, researchers need to be wary of identifying expertise based solely on years of experience.

**Certification.** Certification has been suggested as a marker for expertise (Camerer & Johnson, 1991). Shanteau et al. (2002) indicated “a certified individual is more likely to be an expert than someone who is not certified....However, certification is more likely to be tied to years on the job than it is to professional performance” (p. 254).

For many professions, licensure or certification defines entry into the field rather than recognition of expert-level of performance. For example, an accountant who has passed the CPA exam can become a fully-licensed CPA in most states after only two years of practice. Two years of practice as an accountant would not result in expert-level performance. Once again, in most domains, certification does not guarantee that the individual is an expert.

**Social acclimation.** When using social acclimation (one of the most common tools for identifying expertise), experts are nominated by practitioners in their field (Kuchinke, 1997). Social acclimation is a fairly simple method, but it often fails to accurately identify experts. First, individuals who are outside of the immediate area of expertise may be poor judges of who is an expert (Ericsson & Smith, 1994). An accountant who specializes in international taxation may not be able to judge who is an “expert” in estate and gift taxation. Second, Shanteau et al. (2002) refers to the “popularity effect” where an individual may be identified as an expert based on affability rather than skill.

**Consistency reliability and consensus reliability.** Consistency reliability results when given several similar fact patterns, an individual will provide a similar (correct) answer. “An expert’s judgment should be internally consistent. Conversely, inconsistency would be prima facie evidence that the person is not an expert” (Shanteau et al., p. 255).

Consensus reliability occurs when two experts reach the same conclusion given a set of facts. However, lack of agreement does not necessarily mean that an individual is

not an expert and “experts may agree—but they may still be wrong” (Shanteau et al., p. 256).

Using consistency and consensus reliability requires an agreed upon test of expertise. Some disciplines have existing tests, but in other disciplines the researchers may need to develop and test instruments to determine the degree of consistency or consensus reliability.

**Discrimination ability.** Discrimination ability, “the ability to make fine discrimination between similar, but not identical cases is a defining skill of experts. That is, experts must be able to perceive and act on subtle differences that a non-expert may overlook” (Shanteau et al., p. 256). A caveat in using this criterion is that experts discriminate using relevant data while a non-expert may also discriminate, but use clues that are irrelevant.

**Behavioral characteristics.** Identifying expertise through the use of behavioral characteristics assumes that these behaviors are related to expertise and are actually shared by experts in this domain. An additional concern is that each domain of expertise would have its own set of characteristics. Therefore, the first step would be to identify traits of experts; and, of course, before identifying the traits, the experts would need to be identified. In addition, are behavioral characteristics (e.g. a professional demeanor or charismatic personality) indicative of underlying expertise or are they superficial patinas?

**Knowledge tests.** The problem with using knowledge tests to identify experts is that expertise is more than just factual knowledge. “It is also necessary to see which facts

to apply in a given situation. In most domains, that is the hard part” (Shanteau et. al., 2002. p. 257).

**Creation of experts.** Cognitive science experiments, in effect, *created* experts for many of the ground-breaking studies exploring the cognitive processes of experts. For example, Staszewski (1988) worked over several years to develop an undergraduate student into a “lightning mental calculator,” an individual capable of computing complex arithmetic procedures “in his head” (e.g. 246 x 456). Creating experts for a study is only possible when the area of expertise is of limited scope to allow the expertise to be quickly attained.

**CWS ratio.** Shanteau et al. (2002) suggested that the following ratio:  

$$\text{CWS} = \text{Discrimination} / \text{Inconsistency}$$
 (n.b. CWS are the initials of the three researchers who developed the scale) can be used to assess the level of expertise. A high CWS ratio (experts will have higher ratios) will result when an individual discriminates often and consistently. For example, if A is able to correctly discriminate 90% of the time and is inconsistent in his or her evaluation 10% of the time, the CWS Ratio would be:  $.90/.10 = 9$ . In contrast, B, who is able to correctly discriminate 75% of the time and is inconsistent 30% of the time, would have a CWS of  $.75/.3 = 2.5$ .

This test was developed for use in assessing the expertise of livestock judges, a discipline in which data on past judgments—in terms of both accurate and consistent discrimination—is readily available. However, in domains in which expertise is not formally judged, determining and testing for discrimination and inconsistency would be an arduous task. In addition, the test does not provide an absolute measure of expertise

(for example, assurance that a score of 9.0 or higher represents expert performance).

Instead, the test reflects relative scores. In other words, the CWS does not say if A is an expert, just that A (with a score of 9.0) appears to exhibit more expertise than B (whose score was 2.5).

**Identifying experts.** The objectives of this section were to define the terms expert, expertise and expert performance and to provide guidance on how experts, expertise and expert performance can be identified. In a limited number of domains, determining expertise is fairly straightforward. For example, chess masters are determined using a rating system that tracks the results in tournament play. Musical and athletic organizations also have competitions in which performance is ranked. However, for many areas of practice (including tax accounting) there is not a single litmus test for expertise. Disciplines in which expert decisions are regularly assessed based on agreed-upon criteria (e.g. livestock judges) could use the CWS ratio. Other disciplines, which do not have that type of assessment data available (including virtually all workplace expertise), need to carefully consider how to determine expertise for each study. Unfortunately, many studies that purport to compare experts to non-experts may actually be comparing novices to slightly more capable non-experts (Adelson, 1984).

The best alternative for identifying experts in areas without clear indicators for expertise may be to triangulate using multiple methods. Pedin-McAlpine (2000) used a nomination process (social acclimation) which stipulated that the nurses nominated as experts must have a least five years of clinical experience, a BSN degree, have consistently demonstrated effective clinical decision making, and have had specific

experience with the phenomenon under investigation in the past year. A rubric for identifying tax experts could specify that the individual must have a minimum of a bachelor's degree in accounting, have earned their CPA certification, have ten years of experience, and be nominated by another expert in their field. Ultimately, researchers need to select methods that are both reasonable to administer and reasonably accurate.

### **How is Expertise Developed?**

In the preceding section, expert, expertise and expert performance were defined. Additionally, the difficulty in accurately distinguishing experts from non-experts was discussed. Finally, a suggestion was made for identifying experts. The following section will address theories on how expertise is developed. Are experts born or made? And, if experts are *made*, what is the process for developing expertise?

**Innate characteristics.** The desire to understand exceptional human performance is not a recent phenomenon. Arguably, prehistoric people sought to understand why some individuals were more successful hunters or crafted better tools. Galton's (1869) treatise, *Hereditary Genius*, was one of the earliest scientific studies of expert practice. In this study based on the evolutionary theory of Darwin, Galton identified *men of eminence*, then traced their ancestry in an effort to document that these traits of exceptional performance were inherited. Galton's definition of eminence was essentially an expert's expert—a very select group of individuals who were at the very peak of performance in their domain. Today, we would not agree with his scientific method—his criteria ensured that *men of eminence* were restricted to males from a rather narrow stratum of British society. However, he did identify three characteristics of eminence: vast intellectual

ability, zeal, and the willingness to work hard. Eminence (expert performance) was not due to superior intellect alone; it must be accompanied by zeal (motivation), and hard work.

Attempting to link expert performance to intellectual brilliance continued in the twentieth century. The development of the Stanford-Binet IQ test provided an instrument to identify highly intelligent individuals. In 1922, Terman selected 1,528 children with IQ scores of 140 or higher and monitored their progress through life. The minimum score for inclusion was 140 with a mean of 151—representing the top 1/10 of 1 percent in intelligence. If intelligence were the sole determinant of future success, virtually all participants included in this study should have become experts in their fields. After 35 years, many of these individuals were high achievers; however, a substantial subset failed to excel. Comparisons between the highly successful and less successful members of the cohort found that the successful group generally came from families with higher education levels and of higher social class. Further, when these children were selected for the study based on their high IQ scores, they were also rated by parents and teachers on personality characteristics such as “prudence and forethought...self-confidence...willpower and perseverance, [and]...desire to excel” (Baird, 1982, pp. 33-32). The children who later excelled as adults had scored much higher on these personality characteristics. As in the work of Galton, these high achievers (men of eminence/expert performers), were intelligent, but also had zeal (motivation) and were willing to work hard (willpower and perseverance.)

**Expertise as a learned behavior.** In the mid-twentieth century, researchers began to study expert performance in controlled laboratory settings. Chess was particularly attractive because it required cognitive skill, had clear criteria for identifying expertise, and contained agreed upon activities (chess patterns) to test expertise. De Groot (1978), a nationally ranked chess player in the Netherlands, created an experiment for his PhD dissertation in which he presented diagrams of chess games to expert and non-expert players and asked them to remember the placement of the pieces. De Groot's results suggested that chess masters' expertise resulted from enormous amounts of knowledge stored in memory. In addition, de Groot's chess protocol provided the research platform for future cognitive science research on learning and memory.

**Chunking.** Using the de Groot chess methodology, Simon and Chase (1973) found that expert players were able to remember more of the chess pieces than non-experts as long as the patterns shown were feasible in a game of chess. Experts were no better than non-experts at remembering random pieces arranged on a chessboard. Simon and Chase postulated that expert players did not have superior, short-term memories—they still had short-term memory limited to 3 to 7 items; however, they were able to remember the location of more pieces because they viewed the boards as a single *chunk* of information. In other words, what appeared to be superior short-term memory was actually superior knowledge (Simon & Chase, 1973). Improvements in technology have allowed researchers to further investigate whether experts *chunk* data. Charness, Reingold, Pomplun, and Stampe (2001) were able to measure eye movements of expert

and non-expert players as they were presented with pictures of chess boards. Their research supported the notion that experts visually process larger chunks of information.

***Skilled memory.*** Chunking answered the question of whether experts had innate characteristics (e.g. greater short-term memory) to handle vast amounts of information—they do not. Instead, chunking posits that experts have normal short-term memories, but have learned to identify patterns (chunks) of information. Chase and Ericsson (1981) expanded the investigation of chunking to ask how these *chunks* of information are moved into memory. Their resulting theory, skilled memory, is defined as “the rapid and efficient utilization of memory in some knowledge domain to perform a task at an expert level” (p. 141). The essence of skilled memory is encoding, storing, and rapidly accessing information from long-term memory. Ericsson and Poulson (1988) listed the following principles of skilled memory in which experts: (a) code information efficiently, (b) use retrieval codes to store information in long-term memory, (c) increase encoding speed with practice and (d) have skilled memory that is domain specific.

Numerous laboratory studies have investigated skilled memory. Ericsson and Poulson (1988) conducted a study with a waiter who had an exceptional ability to remember complex restaurant orders without writing them down. They determined that this individual still had a short-term memory capacity of four to five items, but he had developed a skilled memory that was efficient at coding and retrieving from his long-term memory. Straszewski (1988) performed a study in which he taught research subjects to become “lightning mental calculators”—individuals who are able to calculate complex multiplication problems (for example,  $245 \times 78$ ) “in their heads.” He concluded

“expert-level performance in cognitive skills can be achieved by individuals who possess intellectual abilities within the normal range and the motivation to acquire the knowledge through practice” (Staszewski, 1988, p. 124).

Glaser (1984) and Gobet (1998) have added to the theory of skilled memory by proposing structures that link experiences in memory. Glaser (1984) defined *schemata* as “prototypes in memory of frequently experienced situations that individuals use to interpret instances of related knowledge” (p. 100). In other words, learning involves linking together previously learned information as well as encoding and storing new knowledge. Using a chess protocol, Gobet (1998), developed template theory.

For positions that subjects have studied or played extensively, it is proposed that chunks are developed into *templates*. Templates, which are specific to certain types of chess positions, contain at their core a large chunk. They also possess slots that may be filled in when viewing a position (p. 127).

Template theory suggests that there are interconnecting networks between chunks. In addition, this theory would also explain why such extensive practice and experience is needed to develop expertise.

In sum, skilled memory theory supports the contention that expertise is acquired rather than innate. Experts learn to be experts by building huge amounts of knowledge in their domain. Attaining expertise in even simple tasks (e.g. the lightning mental calculator), takes years of practice. Finally, skilled practice requires the motivation to continue to practice. For example, the study of the lightning mental calculators started with two undergraduate students. One student dropped out of the program after a fairly

short time while the other continued for several years. The intriguing question is: Why was the remaining student willing to continue to practice multiplication problems over the course of several years?

***Experience.*** Skilled memory theory suggests that experts have substantially more domain knowledge than non-experts and that this knowledge is obtained through practice. Research on expertise in chess, music, and athletics consistently demonstrates that expertise is related to many hours of practice (Ericsson, 2006a; Ericsson & Charness, 1994; Ericsson, Prietula, & Cokely, 2007; Lehmann & Ericsson, 1998). Bryan and Harter (1897) were two of the earliest researchers to identify the need for extensive experience to gain expertise. In their study, they examined the skill of telegraph operators and noted that it took at least ten years of experience to develop expertise. Ericsson et al. (2007) suggest that it takes 10,000 hours of practice to develop expertise. Even extremely talented individuals (e.g. Mozart) did not attain an expert status until they had completed the equivalent of ten years of practice.

The work of Anderson (1982) further supports the importance of experience through practice. In his adaptive control of thought (ACT) model, Anderson posits that declarative knowledge is turned into procedural knowledge through practice.

Brain imaging technology has enabled researchers to show how practice actually changes the structure of the brain. Fields (2005) suggests that practice increases the myelin which, in turn, increases the processing speed of the brain in a given task. And, a skill must be practiced on a regular basis or the myelin will decrease. That feeling of being *rusty* when you do something that you have not done for some time occurs because

of the decreased myelin. Therefore, when it appears that experts process information more quickly—they do. However, they process information more quickly not because they have inherently faster brains, but because they have developed faster brains through practice.

***Role of formal education.*** The above discussion has focused on the necessity of practice in developing expertise. In the cognitive science laboratory studies of expertise (e.g. chess players, lightning mental calculators) or in studies of musicians and athletes, the process of learning, practice, and experience were intertwined. For instance, musicians learn to play their instruments by receiving instruction while they practice, practice, practice. However, in many work environments, education and experience are separated. Ryle made a distinction between *knowing that* and *knowing how*. *Knowing that* is understanding the theory and principles while *knowing how* is practical application. This distinction provides a philosophical foundation differentiating practical and theoretical knowledge (Lum, 2003; Winch, 2009). Formal education focuses on learning that leads to *knowing that*. Most non-medical professional programs spend little time on *knowing how*. For example, undergraduate and graduate accounting or tax programs focus on tax theory (*knowing that*) and provide little opportunity for *knowing how*. Students may do cases in class or engage in service learning projects in the community, but in general, the academic study is divorced from tax practice (Gujarathi & McQuade, 2002).

Schön (1987) incorporated the theory of knowing that and knowing how into his discussion of the reflective practitioner. According to Schön, a professional needs

technical knowledge, but also needs to be able to do the work. He refers to the need for professional artistry—to be able to go beyond prescribed rules and decision trees to address real-world problems with creative solutions. Professionals learn from experience by reflecting on practice: thoughtfully examining what they have done—what worked and what did not work. Schön described a reflective practicum as an iterative process in which novice professionals work on a project, reflect on their decision with their experienced instructor, and then resume work on their project.

While professional schools should address how real-world practice can be incorporated into their curricula, the bulk of experience for workplace and professional careers will occur on-the-job in the real world. Therefore, experience is generally measured as what happens after formal education.

### **Models of Expertise**

**Dreyfus model.** Representing expertise as a process that develops over years of experience has existed for centuries. In the medieval apprentice system, individuals began as apprentices and over time became journeymen, and ultimately masters. Dreyfus and Dreyfus (1986) proposed a model for the development of expertise that described the journey from novice to expert. The Dreyfus model, first proposed in a 1981 unpublished report and later included as a chapter in their book, *Mind over Machine* (Dreyfus & Dreyfus, 1986), was developed in response to their concern regarding artificial intelligence (AI). Their argument was that while structured problems were amenable to AI, unstructured problems could only be identified and solved by human experts. Their contention was that computers can be programmed to solve structured problems because

there is a defined problem and a set solution. However, unstructured problems—where the issue may not be identified, where there may be an unlimited number of relevant facts, and where there may not be a single correct solution—require the skill of an expert.

The Dreyfus model consists of a continuum in which the professional begins as a novice and, after some real-world experience, becomes an advanced beginner. With additional experience, he or she may become competent, proficient, and ultimately expert. Their model posits that there is a paradigm shift between being a novice and being an expert. The expert not only possesses more knowledge than the novice, but approaches the problems differently—looking at the whole rather than the pieces. The expert processes information faster than the novice, and, more importantly, processes information differently. A novice who tries to use an expert's method of approaching a problem will still produce the results of a novice. It appears there is not a shortcut to expertise (Dreyfus & Dreyfus, 1986; Ericsson, 2005, 2006a).

Benner (1982, 2004) applied the Dreyfus model to nursing. She observed that while nurses start as novices and become advanced beginners and competent performers with experience, a significant number of nurses never advance beyond the competent stage. In other words, it is necessary to have experience to become an expert, but having experience does not guarantee expertise.

Other researchers have proposed models similar to Dreyfus. Fook, Ryan and Hawkins (2002) adapted the Dreyfus model for use in social work by adding two levels to yield the following continuum: pre-student, beginner, advanced beginner, competent,

proficient, experienced, and expert. The Patel and Groen (1991) model included layperson, beginner, novice, intermediate, sub expert, and expert.

A weakness of the Dreyfus model (as well as the Fook, Ryan, and Hawkins model and the Patel and Groen model) is that it shows a linear progression from novice to proficient, and, perhaps to expert as the individual gains more experience. However, their models primarily address experience as a function of time and do not discuss whether different types of experience affect the progression from novice to expert.

**Nonlinear models of expertise.** Both Ericsson, Krampe, and Tesch-Romer (1993) and Bereitter and Scardamalia (1993) have nonlinear models that suggest experts and non-experts are not traveling on a linear continuum from novice to expert. These models propose that experts gain knowledge by engaging in very focused, purposeful learning activities. Novices who will someday become experts use expert learning styles long before they attain expert performance. These future experts will use their increasing skill to push the boundaries of their knowledge while those who will remain non-experts will use their increasing skill to develop routines. Both models suggest that the pathway to expertise is different from the path to becoming an experienced, non-expert. Ericsson et al. (1993) call this process deliberate practice and Bereiter and Scardamalia (1993) use the term progressive problem solving.

***Deliberate practice.*** Ericsson et al. (1993) developed their theory of deliberate practice based on empirical research with musicians and athletes. In their studies, they tracked the number of hours of focused practice that these athletes and musicians completed beginning in their childhoods. As in past studies, they found that these experts

had at least 10 years of concentrated experience prior to attaining their elite status. Their results showed that elite athletes and musicians had significantly more hours of practice than individuals who remained amateur athletes or musicians.

However, not just any practice counts. The practice that develops expertise is deliberate practice. In musical performance “deliberate practice presents performers with tasks that are initially outside their current realm of reliable performance, yet can be mastered with hours of practice by concentrating on critical aspects and by gradually refining performance through repetitions after feedback” (Ericsson, 2006a, p. 694).

The training that Ericsson et al. (1993) specify for deliberate practice is focused on musical and athletic performance. For example, they indicate that individuals need to limit practice in single sessions in order to avoid physical injuries (e.g. pulled muscles).

***Progressive problem solving.*** Unlike musicians or athletes, professionals in the workplace cannot improve their skills by practicing scales or engaging in strength and agility training. Instead, practice for workplace professionals comes from real-world experience in their domains. Bereiter and Scardamalia (1993) propose that professionals develop expertise by engaging in progressive problem solving. When engaging in progressive problem solving,

people must choose to address the problems of their field at the upper limit of the complexity they can handle...for it is through such working at the upper edge that people develop the deep knowledge that makes expert performance possible (p.19).

Unlike deliberate practice, progressive problem solving often takes place in an environment in which learning or developing expertise is not the primary objective. Instead, the principal objective is performing specific tasks, completing client projects, or generating revenue. Since many of these tasks are routine, they do not provide the opportunity for solving challenging problems required in progressive problem solving. Thus, the workplace may support the development competent or proficient performance, but workplace experience does not necessarily encourage or nurture expert performance. The problem, of course, is that some problems are not routine and require an expert's approach.

**Summary.** To become an expert in a domain requires years of dedicated, concentrated practice and experience. However, the disconnect between theoretical formal education (knowing that) and practical, real-world experience (knowing how) may impede the development of workplace expertise. In addition, while the workplace may provide experience, it may not always provide the kind of experience that fosters the development of expertise.

### **Do Experts Always Perform Well?**

In the above discussion, the unstated assumption is that expertise is beneficial—that experts perform better than non-experts. If experts do not perform better than non-experts, why bother to pursue expertise? A number of studies question expert performance. Adelson (1984) found that novices outperformed experts in some computer programming skills. Camerer and Johnson (1991) indicated that expert systems or algorithms are sometimes more accurate and reliable than experts. Finally, a number

studies indicate that experts simply do not predict well (Camerer & Johnson, 1991; Johnson, 1988)

**Do experts perform better than non-experts?** Experts should perform better than non-experts, but only if (a) the experts *are* experts and (b) the experts are operating in their domains. Many studies that purport to compare expert to novice performance are actually comparing novices with slightly more experienced non-experts. In the Adelson (1984) study, the novices were students in a programming class and the “experts” were graduate teaching assistants for the class. While the graduate teaching assistants were more knowledgeable and had more experience than the students, it is unlikely that they met the criteria for true expertise.

Expertise is tied to a specific domain; and, experts do not have expertise outside of their specific domain of knowledge. For example, Camerer and Johnson (1991) found that doctors who were on a committee to select medical students for residencies were not accurate in predicting which of the residents would be successful. While the doctors may be expert in their specific medical domain, these doctors may not have expertise in accurately identifying and selecting future physicians in their specialty.

**Are Algorithms or Models Superior to Experts?** Camerer and Johnson (1991) also found that in medical domains “expert judgments have been worse than those of the simplest statistical models” (p. 203). Dreyfus and Dreyfus (1986) argue that human expertise is needed for ill-structured problems—problems for which there is not a simple algorithm. Once the algorithm is developed, a machine or a non-expert can perform the task. Therefore, the fact that a hand-held calculator can more quickly and accurately

compute square roots does not diminish the importance of experts in areas of ill-defined problems. Experts develop the algorithms, but once the activity has been routinized, an automated system may be more reliable than the expert.

**Can experts predict?** Studies have indicated that experts are not expert at predicting outcomes (Camerer & Johnson, 1991; Johnson, 1988). Sometimes the reason that experts do not predict well is that the prediction is actually not part of their domain expertise. As indicated above (Camerer & Johnson, 1991), doctors may not have expertise in identifying the capabilities of future residents. Judges may not be accurate in sentencing decisions because their expertise is in administering the law, not assessing the social and psychological issues that influence sentencing. However, sometimes experts do not predict well because the task involved does not lend itself to expert behavior (Shanteau, 1992). Torngren and Montgomery (2004) found that expert stockbrokers were no better at predicting stock performance than laypeople. In fact, their study stated that stockbrokers failed the *chimpanzee test*—a chimpanzee at a dartboard (i.e. random chance) would have done better. It is not possible to have expertise in areas in which there is an absence of sound theory. In other words, if outcomes are random (or at least they appear random because we do not understand the guiding forces), then expert performance is not possible.

Geisler (1994) has suggested that the importance of expertise is tied to whether the outcome is totally predictable, totally unpredictable, or somewhat predictable. If an outcome is totally predictable, the outcome is the result of a routine or an algorithm—an expert is not needed. On the other hand, if an outcome is totally unpredictable, the

outcomes are random and the domain does not lend itself to expertise; hence, the lack of success in predicting the price fluctuations in the stock market. However, when a domain is somewhat predictable, expertise can help identify and define the problem and offer possible alternatives.

Geisler's model is consistent with the Ashby Space model of complexity (Boisot & McKelvey, 2010). The Ashby space is partitioned into three regimes: the ordered regime, the complex regime, and the chaotic regime. In the ordered regime, success, if not totally predictable, is highly predictable; therefore, the ordered regime would lend itself to algorithms, expert systems, or prescribed routines. In the chaotic regime, success would be totally unpredictable—outcomes are tied to chance. Making a prediction in the chaotic regime is more of a roll of the dice than a knowledge/experienced-based decision. Finally, in the complex regime, outcomes are not random, but they are subject to a number of countervailing forces which may preclude precise prediction, but would allow anticipation. Expertise would appear to provide the greatest value in the complex regime—a place of ill-defined problems and numerous interactions between systems and processes. In the complex regime, simple routines will not work, but deep knowledge of the domain can allow an expert to *anticipate* risks and opportunities even if the actual outcome cannot be perfectly predicted.

**Is there value to expertise?** I propose that experts provide value when operating in the appropriate level of complexity. An expert is not needed when a simple algorithm can solve the problem. The expert may need to identify the issue before the routine or

algorithm can be applied, but the expert does not need to make the actual calculation or perform the task. In fact, experts may not be adept at routine work because routines may no longer be part of their day-to-day practice.

In an area of chaos where outcomes are totally unpredictable, practical expertise does not exist. This regime lends itself to frauds and charlatans (e.g. psychics) or simply to supposed experts who are star performers when they are lucky and poor performers when the odds turn against them (Torngren & Montgomery, 2004). Expert researchers may operate in the chaotic regime to better understand this environment and to propose theories that may allow this domain to move from chaos to complexity, but expertise, per se, cannot exist in chaos.

Expertise shines with ill-defined problems in the midst of complexity. Complexity may appear to be chaotic to the non-expert, but the expert is able to see underlying order, patterns, or frameworks in the data. The expert may not perfectly predict outcomes—because a complex environment precludes certainty, but an expert operating in a complex environment can identify issues, opportunities and *anticipate* the likely outcomes.

## **Conclusion**

Research has established that experts are made and not born. In fact, height is the only characteristic that is inherited and cannot be influenced by hard work (Ericsson & Smith, 1991). Clearly, height is not a relevant characteristic for tax accountants. However, although individuals become experts after they have attained prodigious knowledge in their fields that does not mean that innate intelligence has no influence on

performance. Meinz and Hambrick (2010) found that given the same number of hours of deliberate practice, musicians with larger working memories (which are linked to intelligence) were better able to sight-read music than individuals with smaller working memories. In other words, Nobel laureates are likely to be extremely intelligent *and* highly motivated to work hard over many years. But, research has shown that extremely intelligent people who are not motivated will not achieve while individuals who are *intelligent enough* and are motivated to work very hard over many years are likely to be high performers.

Overall, experts are made through years and years of dedication and hard work building the knowledge base in their domains. Expert performance can appear intuitive or effortless, but this fluid performance is the result of years of building knowledge—encoding information into long-term memory and making connections with previously learned information. Knowledge is learned through many years of deliberate practice or progressive problem solving. Through this process, experts literally change the biological structure of their brains.

The literature indicates that expertise is domain specific. For example, an individual who has developed expertise in cardiology would be unlikely to have expertise in tax accounting. In fact, an expert cardiologist is unlikely to have expertise in another medical specialty (e.g., dermatology or psychiatry). However, it appears that the *process* of developing expertise may be similar across disciplines. Deliberate practice or progressive problem solving may be involved in developing expertise whether the

domain is music, athletics, medicine, or tax accounting. How expertise is developed may be similar even if the nature of the practice and the type of problem solving are different.

Building expertise in the workplace poses several dilemmas. First, educational preparation (knowing that) is separated from real-world performance (knowing how). In addition, Scardamalia and Bereiter (1991) suggest that our educational system may be structured to encourage non-expert learning. Students learn to write (and are often tested) on knowledge telling—a routine type of knowledge rather than knowledge transformation—the educational analog of progressive problem solving. Thus, there is an opportunity for education—especially professional education—to shift from emphasizing knowledge telling to promoting knowledge transforming activities. In addition, educational institutions need to increase opportunities to link *knowing that* and *knowing how*. Schön (1987) has suggested the reflective practicum, but more research is needed to identify other work/education partnerships that can promote integration between theory and practice.

Another workplace dilemma in advancing expertise of tax accountants is that developing employees is not the primary objective of the accounting firm. When athletes and musicians engage in deliberate practice to develop expert performance, they are not concerned with meeting production or profitability standards. Young musicians who have mastered a technique are able to tackle a more difficult challenge. However, in the workplace, tax accountants may be assigned routine tasks long after they have mastered the knowledge—the return has to be filed even if it is routine. Therefore, it is likely that tax accountants only spend a small portion of their work experience engaged in

progressive problem solving because of the mundane, day-to-day tasks that define their jobs. A significant research opportunity exists to identify how tax accountants develop technical-tax expertise.

Questions include:

- Is there evidence that progressive problem solving in the workplace promotes the development of tax accounting expertise?
- How does employee motivation and willingness to engage in hard work, impact their likelihood of developing tax accounting expertise?
- Do some firms consciously provide opportunities for their tax accountants to solve increasingly challenging problems?
- What role do training and development programs play in the development of tax expertise?
- What role do advanced degree programs (e.g. MST programs) play in advancing expertise?
- Do tax accountants have common experiences in developing technical-tax expertise?

A chronology of research in expertise (Table1) provides an overview of key research studies on expertise over the past 140 years. Much of the work has been in cognitive science and has focused on understanding the mental processes of developing knowledge. Many of these studies were conducted in controlled laboratory settings or in other domains (e.g. music and athletics) where performance is easily observed and measured. While psychologists and biologists will continue to delve into the working of

**Table 1:**

*Chronology of Representative Expertise Research*

<b>Year</b>	<b>Author</b>	<b>Topic</b>
1869	Galton (1869)	<b>Hereditary genius.</b> Examined British “men of eminence” based on Darwin’s evolutionary theory to determine if eminence (expertise) is an inherited trait.
1897	Bryan & Harter (1897)	<b>10 years to develop expertise.</b> Studied telegraph operators and noted that it took ten years to reach an expert status.
1922	Baird (1982)	<b>Intelligence and expertise.</b> Terman identified high IQ children and followed their progress for the next forty years. Determined that social class and personality characteristics were as important as IQ in future life success.
1946	De Groot (1965)	<b>Chess protocol for cognitive skills.</b> Developed chess protocol to study cognitive skills. Determined that chess masters have a great deal of knowledge.
1973	Simon and Chase (1973)	<b>Chunking.</b> Developed theory of “chunking” using de Groot chess protocol. Determined that experts do not have larger short term memory capacity; instead, they learn to combine smaller pieces of data into single chunks.
1981	Chase & Ericsson (1981)	<b>Skilled memory.</b> Experts encode, store, and retrieve information quickly and accurately using long-term memory. Skilled memory requires extensive practice.
1981	Dreyfus & Dreyfus (1986)	<b>Experience continuum.</b> To become an expert, individuals need experience in their domain. With experience, some individuals will move from novice to advanced beginner to competent to proficient to expert.
1987	Schön (1987)	<b>Reflective practitioner.</b> Practitioners learn by reflecting on performance.
1993	Ericsson, Krampe, Tesch-Romer (1993)	<b>Deliberate practice.</b> To gain expertise, individual must engage in rigorous, purposeful practice.
1993	Bereiter & Scardamalia (1993)	<b>Progressive problem solving.</b> Examined development of expertise in work settings. Determined that non-experts work on routine problems while experts tackle difficult problems.
1998	Gobet (1998)	<b>Template model.</b> Expanded upon skilled practice model to suggest that expertise requires integration of knowledge. Supports the need for extensive practice to gain expertise.
2002	Shanteau, et. al. (2002)	<b>Model to identify experts.</b> Suggested a model to identify experts in domains which do not have existing standards for expertise.
2005	Fields(2005)	<b>Myelination.</b> Determined that practice causes myelin in the brain to change. Learning results in structural changes in the brain.
2010	Meinz & Hambrick (2010)	<b>Intelligence /Innate ability.</b> Given the equal amount of deliberate practice, more intelligent individuals will outperform those with less intelligence.

the human brain to understand expertise, applied disciplines, such as human resource development, need to focus on understanding and identifying processes by which expertise can be developed in the workplace.

### **Chapter 3 Research Methodology**

I used grounded theory methodology (GTM), an inductive research approach in which theory is built from data, as the research methodology for this project. My research question sought to identify how tax accountants develop technical-tax expertise. Since GTM uses data to identify underlying processes that explain a social phenomenon, GTM is well suited to revealing processes embedded in data.

I selected GTM after considering and rejecting alternate research methodologies. If I had identified an existing theory to test, I would have elected to use an empirical hypothesis-testing design. If my objective were to understand the experience of being an expert in tax accounting, I would have selected phenomenology. And, if my goal were to understand the process of developing expertise in a single firm, I would have chosen a case study design. However, since my objective was to understand the how tax accountants develop technical-tax expertise, GTM best suited my research question.

#### **Grounded Theory Methodology**

GTM, “discovered” in a mid-1960s study of the process of death and dying, is an inductive methodology that builds theory from data. In a properly conducted GTM study, the theory emerges from the data and is built from the ground up—hence the name. “The goal of grounded theory is to generate a conceptual theory that accounts for

a pattern of behavior which is relevant and problematic for those involved” (Glaser, 2003 p. 3).

GTM grew out of the work of two sociologists, Anselm Strauss and Barney Glaser in a study of dying hospital patients. Glaser and Strauss approached the study without a priori hypotheses to verify; instead, their theory was inductively generated from the data. The results of this study were reported in *Awareness of Dying* (Glaser & Strauss, 1965). According to Glaser, they developed grounded theory using grounded theory methodology (Hutchinson & Wilson, 2001).

Glaser and Strauss devoted one chapter in *Awareness of Dying* to describing their research methodology; however, other researchers interested in using this new methodology found that the single chapter did not provide a sufficiently detailed description of the process. Therefore, Glaser and Strauss published their seminal work in GTM, *The Discovery of Grounded Theory* (Glaser & Strauss, 1967) to provide a more in-depth explanation on conducting a grounded theory study. In 1978, Glaser published *Theoretical Sensitivity* (Glaser, 1978) that provided additional guidance for designing and conducting research using GTM.

For the next 20 years, GTM gained popularity as a research methodology. Although the research approach was specifically developed for sociology, it has now been used for research in domains as diverse as nursing (Simms, 1981), medicine (Kennedy & Lingard, 2006), business (Goulding, 2005; Martin & Turner, 1986), and psychology (Fassinger, 2005; Turner, 1983). In 1990, a major schism occurred when Strauss and Corbin published *Basics of Qualitative Research: Grounded Theory*

*Procedures and Techniques* (1990). Glaser disavowed the Strauss and Corbin treatise maintaining that the procedures advocated in their book were not consistent with a grounded theory approach (Glaser, 1992). Since the 1990s, GTM has divided into two somewhat hostile camps: (Bryant, 2003, Glaser, 2002) the *classic* Glaser grounded theory approach versus the Strauss and Corbin methodology (Anells, 1997).

The first decision that the researcher needs to make in conducting a grounded theory study is whether to use the Glaser or the Strauss/Corbin version. Since these methods reflect fundamental, philosophical differences, the researcher must understand the epistemological and ontological foundations of the Glaser and Strauss/Corbin versions in order to select a method best suited to the researcher's philosophical perspective. The philosophical differences between these two traditions are revealed in examining the history of GTM.

The history of GTM, represented as a tree (Figure 1), has its *roots* in the methodological backgrounds of Glaser and Strauss. The *trunk* of tree begins with the publication of *Awareness of Dying* in 1965 (Glaser & Strauss, 1965) and continues until the publication of *Basics of Qualitative Research* in 1990 (Strauss & Corbin, 1990). In 1990, GTM divides into two separate *branches*: the Glaser method and the Strauss & Corbin method.

While GTM was *discovered* in 1965, the genesis of this methodology predates the publication of *Awareness of Dying*. Glaser and Strauss, who were both sociologists, trained in two different traditions. Glaser was trained in Columbia University's quantitative approach while Strauss was a product of the University of Chicago's

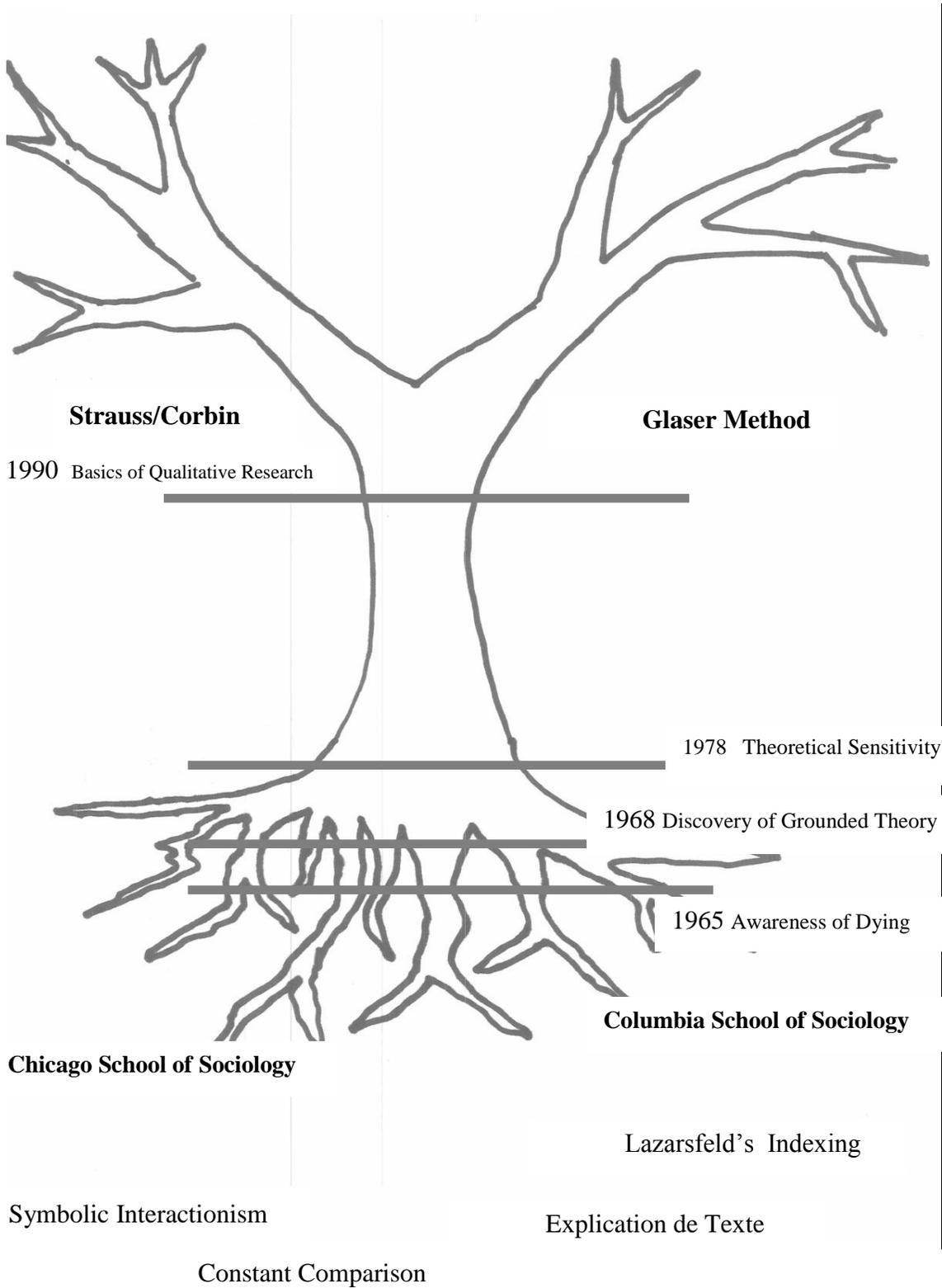
qualitative school. To appreciate the impact of each of these traditions on grounded theory, it is necessary to first understand the original GTM as described in *The Discovery of Grounded Theory* (1967) and *Theoretical Sensitivity* (1978). Thus, the next section will describe the tenets of the 1960s /1970's version of GTM followed by a discussion of the contributions of both the Chicago and Columbia schools.

### **Roots of Grounded Theory**

Glaser and Strauss developed grounded theory as a methodology to specifically address research in sociology. In Figure 1, the antecedents of grounded theory are represented by the *roots* of the grounded theory tree. In the 1930s, qualitative methods had been used in sociological studies; however, the studies often were not well designed and did not result in *good* research. After WWII, positivistic, hypothesis-testing research became the dominant methodology. Scholarly sociological research involved verification testing of grand theory, the overarching sociological theory developed by luminary sociologists such as Durkheim and Weber. Verification of grand theory did not support the development of new theory; at best, new theoretical ideas were *tacked on* at the end of the study. Therefore, Strauss and Glaser were looking for a rigorous method that would allow for the development of new theory *from scratch*. The discovery of GTM was spurred by the desire to create new, high-quality, rigorous theories of basic social psychology processes (Glaser & Strauss, 1967).

**Key components of the original GTM.** When Glaser and Strauss conducted their initial grounded theory research in the mid-1960s, they entered the field without preconceived theory or hypotheses to test; however, they did not enter the field in

**Figure 1** History of Grounded Theory



ignorance. Both Glaser and Strauss were trained sociologists and brought their previous knowledge to their research. Since their objective was to discover theory rather than to verify an existing theory, they did not conduct an extensive literature review to develop hypotheses for testing.

***Entering the field.*** Grounded theory researchers enter the field and gather data from interviews, observations, documents, or even quantitative data and immediately begin to analyze the data.

Constant comparative analysis is built upon two key concepts: “constant comparison,” in which data are collected and analyzed simultaneously, and “theoretical sampling” in which decisions about what data should be collected next are determined by the theory that is being constructed (Suddaby, 2006, p. 634).

Thus, the researcher collects data and immediately begins an iterative process of examining data, comparing, capturing insights, and comparing again (Egan, 2002; Fendt & Sachs, 2008; Glaser & Strauss, 1967). At the same time that researchers are coding data, they are also memoing to capture their thoughts about emerging theory and concepts. Eventually, with enough patience a core concept will emerge.

***Exploring the core concept.*** Grounded theory researchers use theoretical sampling to further explore and clarify the core concept. The primary question asked during theoretical sampling is: "What group or subgroups does one turn to next in data collection? ...In short, how does the sociologist select multiple comparison groups?" (Glaser & Strauss, 1967, p. 47). While collecting additional data through theoretical

sampling, the researchers engage in theoretical sorting to continuously revisit memos and codes and further define categories and properties of categories. Coding, sampling, sorting, and memoing are all parts of the process of constant comparative analysis. The sampling ceases when researchers attain theoretical saturation, that is, additional samples do not yield new categories (Glaser & Strauss, 1967).

***Concluding the process.*** Once the theory is developed, researchers conduct a second literature review to link the new theory to existing theory. “Grounded theory is concluded when the researcher has observed a point of data saturation and sufficient theory” (Egan, 2002, p. 286). Grounded theory research can either result in substantive theory, which relates to very specific circumstances, or formal theory, which applies to a more general set of conditions.

***Summary.*** The basic steps in classic GTM are:

- Enter the field and immediately analyze data.
- Fracture the data by coding line-by-line, incident- by-incident.
- Memo theoretical insights.
- Engage in constant comparative analysis—comparing code to code, incident to incident, incident to code.
- Identify the core concept as it emerges from the data.
- Theoretically sample by selecting sample subjects based on the core concept.
- Continue to sample, memo, sort, and constantly compare until theoretical saturation is reached (i.e., the concepts and properties of concepts are fully described).
- Write the report (Glaser & Strauss, 1967).

**Theoretical precedents of GTM.** The preceding section identified the basic processes of GTM as developed by Glaser and Strauss in the 1960s. This next section will explore the theoretical foundations of Strauss and Glaser to discuss how their backgrounds influenced the development of GTM.

*Symbolic Interactionism.* Both Glaser and Straus acknowledge that GTM was built on the foundation of symbolic interactionism (Glaser, 1998; Glaser & Strauss, 1967; Strauss & Corbin, 1990). “The term symbolic in the phrase symbolic interaction refers to the underlying linguistic foundations of human group life, just as the word interaction refers to the fact that people do not act toward one another but interact with each other” (Denzin, 2004, p. 81).

Symbolic interactionism, which grew out of the Chicago school of sociology, was largely developed by George Mead and Herbert Blumer. Blumer (1969) described the three premises of symbolic interactionism as follows:

The first premise is that human beings act toward things on the basis of the meanings that things have for them (e.g. trees, chairs, mothers)...The second premise is that the meaning of such things is derived from or arises out of the social interaction that one has with one's fellows...The third premise is that these meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters (p. 2).

Symbolic interaction can be contrasted with non-symbolic interaction—a reflex reaction in which a stimulus triggers an automatic, predictable response. If meaningful human

interaction is governed by symbolic interaction rather than stimulus/response, then, research methods to understand human experience need to match this philosophy.

According to Blumer (1969), four methods of traditional sociological research:

adhering to scientific protocol, engaging in replication, testing hypotheses, and using operational procedures do not provide the empirical validation that genuine empirical social science requires. They give no assurance that premises, problems, data, relations, concepts, and interpretations are empirically valid. Very simply put, the only way to get this assurance is to go directly to the empirical social world—to see through the meticulous examination of it whether one's premises or root images of it...are actually borne out (p. 32).

In sum, the position of symbolic interactionism is that traditional logico-deductive hypothesis testing cannot uncover the essence of meaning in the human experience. Symbolic interactionism would support a research methodology based in the real world that allows researchers to capture the meaning that a person brings to the experiences of life.

***Lazarsfeld: Indexing.*** The Chicago school's symbolic interactionism forms the philosophical foundation for GTM: Data is gathered in the real world from the words and actions of the people experiencing the phenomenon. However, the quantitatively-oriented Columbia school was instrumental in providing analytical tools for GTM. Glaser (1998) credits the work of Lazarsfeld for influencing the process of fracturing and coding data. Lazarsfeld (Lazarsfeld & Robinson, 1940) developed an indexing protocol

to convert qualitative case studies into data that could be quantitatively analyzed. In indexing, the researcher develops a priori categories, then, codes incidents in the case study based on these categories. The result is to fracture a case study into events that can be quantified and statistically analyzed.

The fracturing and coding of case studies, interviews, observations or written documents in GTM is very similar to the process in indexing. Rather than looking at themes that run through the data, the researcher fractures the story into individual incidents. A fundamental difference between indexing and GTM coding is that in Lazarfeld's indexing method, researchers entered the field with a priori codes. In GTM, researchers strive to approach the data without preconceived codes. Instead, researchers fracture the data, assign provisional codes, and continue to code and compare until the underlying theory emerges from the data—whereupon, the category can be identified.

*Explication de texte.* Glaser (1998) also contributed the concept of “explication de texte” to the analysis used in GTM. Prior to his graduate training at Columbia, Glaser attended the University of Paris where he learned “explication de texte.” Explication de texte or *close reading* is a process of studying words and phrases to clarify the underlying meaning. The purpose of reading and translating is to understand not just the words, but to capture the essence of what the author is trying to communicate (Stern, 2006). The coding process is a type of translation—the researcher is trying to understand not just the words, but also the underlying meaning of those words or phrases to the participant. Coding line-by-line helps the researcher comprehend the meaning rather than just the words of the participants.

***Constant comparative analysis.*** Constant comparative analysis, where theory inductively emerges through an iterative process of analyzing, coding, and memoing, is the heart of GTM. While this technique is firmly linked to GTM, aspects of this protocol were apparent in work that preceded Glaser and Strauss. In a journal article prior to the publication of *Awareness of Dying* (Glaser & Strauss, 1965), Glaser (1965) cited the qualitative analysis method used by Becker (1958). Becker, who received his PhD in sociology from the University of Chicago, used participant observation to investigate the experience of first year medical students. In his study, researchers examined the lives of these students by observing their lectures, labs, hospital rounds, fraternities, and social interactions. Becker (1958) noted that “the important part of the analysis was made while the researcher [was] still gathering his data” (p. 653). The researchers were simultaneously gathering and analyzing data and using this early analysis to guide their choices for future observations. In most research methods, analysis does not begin until the data collection process has concluded. Constant comparative analysis developed the process of simultaneously gathering and analyzing data.

***Summary.*** GTM combines elements from the University of Chicago and Columbia University schools of sociology. Clearly, symbolic interactionism (tied to the Chicago school) forms the foundation of GTM. Constant comparative analysis was adopted from the work of Becker, a University of Chicago trained sociologist. Indexing developed by Lazarsfeld of Columbia influenced the coding process. Finally, explication de texte was Glaser’s contribution to analyzing sentence by sentence to understand the underlying meaning.

### **1968 to 1990: The Trunk of the Tree**

The years from 1968 to 1990 are represented in Figure 1 as the *trunk* of the tree. During this time, Glaser left traditional academia while continuing to champion the GTM. His publication of *Theoretical Sensitivity* (Glaser, 1978) further elaborated, but did not substantially change the underlying methodology. Meanwhile, Strauss remained in academia as an eminent sociologist conducting his own research as well as supporting the development of the research capabilities of his graduate students.

### **The Great Schism**

In 1990, Strauss and Corbin published *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, a book specifically designed to help students conduct grounded theory research. Strauss and Corbin found that students attempting to use a grounded theory approach needed more guidance on how to conduct their research. *Basics of Qualitative Research* was written, in part, as a *how to* manual. This book was not a repudiation of the work of Glaser; in fact, it was dedicated to Barney Glaser, “with admiration and appreciation” (Strauss & Corbin, 1990, p. 2). However, Glaser saw practices advocated in *Basics of Qualitative Research* as fundamentally changing the essence of the methodology to the point that their method “cannot produce a grounded theory. It produces a forced, preconceived full conceptual description, which is fine, but it is not grounded theory” (Glaser, 1992 p. 3). In *Emerging vs. Forcing* (Glaser, 1992), Glaser refuted the tenets of *Basics of Qualitative Research*. Thus, the publication of *Basics of Qualitative Research* precipitated the *great schism* in GTM. As illustrated in

Figure 1, GTM split into two branches: the Glaser method and the Strauss/Corbin method.

**Comparison of Glaser & Strauss/Corbin Methodologies.** This next section will compare and contrast Glaser's method to Strauss/Corbin's method. Table 2 provides a side-by-side comparison of the components in the Glaser and the Strauss/Corbin methods. At first glance, it is apparent that both methods include the same basic processes: sampling, constant comparative analysis, coding, memoing, theoretical sensitivity and theoretical saturation (Walker & Myrick, 2006). While the definitions of constant comparative analysis, theoretical sensitivity and theoretical saturation are the same; the definitions of sampling, coding and memoing are different.

**Coding.** The fundamental difference between the two methods occurs in the open coding process. In Glaser, coding occurs line-by-line or incident-by-incident with the researcher asking: "What category or property does this incident indicate?" Strauss and Corbin agree that researchers can code incident-by-incident or line-by-line, but they also encourage coding "word-by-word." In addition, rather than limiting the question to: "What category or property does this incident indicate?" they also allow the researcher to ask, "who, what when where, how and why." By allowing word-by-word coding and encouraging a multitude of questions to be asked of each item that is coded, the researcher may fracture the data into an enormous number of codes (Heath & Cowley, 2004). The sheer volume of codes means that the researcher needs tools to manage the data. Thus, axial coding in the Strauss/Corbin model exists to help the researcher pull together the fractured data (Strauss & Corbin, 1990).

**Table 2**  
*Comparison of Glaser and Strauss/Corbin Methods*

Glaser	Strauss and Corbin
<b>Sampling</b>	
<p><b>Open Sampling</b></p> <ul style="list-style-type: none"> <li>Definition: Open sampling is purposive sampling in which the researcher selects subject with experience in the area under investigation</li> </ul> <p><b>Theoretical Sampling</b></p> <ul style="list-style-type: none"> <li>Definition: "Theoretical sampling is the process of data collection for generating theory" (Glaser &amp; Strauss, 1968, 45). Theoretical sampling happens after the core category has been identified.</li> </ul>	<p>Open sampling</p> <ul style="list-style-type: none"> <li>Definition: the initial sampling that occurs while open coding</li> </ul> <p>Relational and variational sampling</p> <ul style="list-style-type: none"> <li>Definition: Coding processes that accompany axial coding.</li> </ul> <p>Discriminate sampling</p> <ul style="list-style-type: none"> <li>Definition: Coding during the process of selective coding.</li> </ul>
<b>Coding</b>	
<p><b>Substantive Coding</b></p> <p><b>Open coding</b></p> <ul style="list-style-type: none"> <li>Definition: Open coding occurs when the analysis first begins before the researcher has identified the core categories.</li> <li>Level: Code line-by-line or incident-by-incident</li> <li>Questions: What category or property of a category does this incident indicate?</li> </ul> <p><b>Selective coding</b></p> <ul style="list-style-type: none"> <li>Definition: "To selectively code means to cease open coding and to delimit coding to only those variables that relate to the core variable"(Glaser, 1992, p. 75).</li> </ul> <p><b>Theoretical coding</b></p> <ul style="list-style-type: none"> <li>Definition: Theoretical coding identifies the relationship between categories and their properties. (Glaser, 199</li> </ul>	<p><b>Open coding</b></p> <ul style="list-style-type: none"> <li>Definition: Process of breaking down, examining comparing, conceptualizing, categories and data.</li> <li>Level: Code line-by-line, incident-by-incident or word-by-word.</li> <li>Questions: Who, what, when where why, how much</li> </ul> <p><b>Axial coding</b></p> <ul style="list-style-type: none"> <li>Definition: "A set of procedures whereby data are put back together in anew ways after open coding"(Strauss &amp; Corbin, 1990, p. 96).</li> <li>Tool/technique: Coding paradigm involving conditions, context, action/interactional strategies and consequences. (Strauss &amp; Corbin, 1990, p. 96).</li> </ul> <p><b>Selective coding</b></p> <ul style="list-style-type: none"> <li>Definition: "The process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development"(Strauss &amp; Corbin, 1990, p. 116).</li> </ul>
<b>Constant comparative analysis</b>	
Both methods use constant comparative analysis as the core analytic procedure.	
<b>Memoing</b>	
<p><b>Memos</b></p> <p>Definition: "Memos are the theorizing write up of ideas about codes and their relationships as they strike the analyst while coding" Glaser, 1978, p. 83)</p>	<p><b>Code notes</b></p> <ul style="list-style-type: none"> <li>Definition: memos resulting from open, axial and selective coding</li> </ul> <p><b>Theoretical notes</b></p> <ul style="list-style-type: none"> <li>Definition: memos that contain theoretical ideas from inductive and deductive reasoning</li> </ul> <p><b>Operational notes</b></p> <ul style="list-style-type: none"> <li>Definition: Memos containing notes to yourself regarding administrative and procedural aspects of the study</li> </ul> <p><b>Diagrams</b></p> <ul style="list-style-type: none"> <li>Definition: "Visual representations or relations between concepts"(Strauss &amp; Corbin, 1990, p. 197).</li> </ul>
<b>Theoretical Saturation</b>	
Both methods share the definition that theoretical saturation occurs when no new categories or properties emerge. (Strauss & Corbin, 1990; Glaser, 1972)	
<b>Theoretical sensitivity</b>	
Both methods share the definition that theoretical sensitivity is a characteristic the researcher needs to bring to a grounded theory study. (Strauss & Corbin, 1990; Glaser, 1992).	

In Glaser, open coding leads to selective coding while in Strauss and Corbin, open coding is followed by axial coding. Axial coding introduces the coding paradigm, a tool to help researchers reassemble the fractured data. The Glaser version does not have a coding process analogous to axial coding. In fact, Glaser characterized techniques such as the coding paradigm as evidence of *forcing* rather than allowing the theory to *emerge* (Glaser, 1992).

Once axial coding is complete in Strauss/Corbin, selective coding ensues. Glaser's selective coding simply means that the researcher limits coding to the core variable. Then, in Glaser, completion of selective coding leads to theoretical coding. Glaser's theoretical coding and Strauss and Corbin's selective coding reflect a similar process of refining the categories and properties into a theory.

***Sampling.*** The differences in terminology for sampling between the two methods reflect the differences in coding. For example, relational and variational sampling in Strauss and Corbin simply refer to the sampling used in axial coding. Open sampling is used by both Glaser and Strauss/Corbin to describe the initial process of sampling. Theoretical sampling (called discriminate sampling by Strauss and Corbin) describe sampling that occurs after the core concept is identified and the researcher is collecting data specific to that core concept.

***Memoing.*** Strauss and Corbin (1990) specify four types of memos: code notes, theoretical notes, operational notes, and diagrams, while Glaser simply uses the term *memoing*. For the most part, Strauss and Corbin's distinction between these types of notes reflects their goal of providing greater guidance for their students. For Glaser, a

memo is a memo—the nature of the memo changes as the researcher progresses from open coding to selective coding to theoretical coding, but the terminology for the memo does not. The only significant difference between the concept of memoing between Glaser and Strauss/Corbin is that Strauss/Corbin method encourages the use of diagrams and models. Glaser found the use of diagrams and models by Strauss/Corbin to be somewhat suspect. Once again, he noted that diagrams or models are not theory (Glaser, 1992).

**Epistemological and ontological differences.** Do these differences between Glaser and Strauss/Corbin reflect a fundamental difference in their epistemologies or merely a difference in technique? Strauss felt that *Basics of Qualitative Research* was not a new method, but simply provided new tools and procedures. (Locke, 1996). Glaser was adamant that Strauss and Corbin's process should not be called grounded theory since the conditional matrix and coding paradigms introduced by Strauss and Corbin were unnecessary and would lead to forced, preconceived theory (Glaser, 1992). Glaser (1992) argued that the researcher needs “to be able to step back or distance oneself from [the data]...”(p. 11). The notion that the researcher is separate from the data is consistent with a critical realist ontology.

A realist ontology rests on the assumption that the variables of interest exist outside individuals and are, therefore, concrete, objective and measurable. An ‘interpretist’ ontology rests on the contrasting assumption that human beings do not passively react to external reality, but, rather

impose their internal perception and ideals on the external world, and in so doing actively create their realities (Suddaby, 2006, p. 636).

The open coding in the Strauss/Corbin method allows the researcher to code word-by-word and to ask many questions of the data. This practice encourages the researcher to engage with the data and co-create meaning rather than to objectively observe the data (Annells, 1996). Therefore, the Strauss/Corbin method would be consistent with and interpretivist/constructivist ontology.

That Glaser would have a critical realistic epistemology while Strauss/Corbin would have a constructivist epistemology is consistent with both their backgrounds and careers. Glaser came out of a positivist background and did not remain in an academic sociology. After leaving academia, Glaser became deeply ensconced in GTM. After 1970, Glaser's research and publication were focused on grounded theory as a methodology. Strauss, coming out of the Chicago school of sociology, had a qualitative rather than quantitative background. Over the ensuing decades, Strauss continued to conduct sociological research in medical and health related fields. In addition, to his own research he also supervised the research of his graduate students. Therefore, he was much more likely than Glaser to have been immersed in epistemological and ontological movement towards constructivism (Mills, Chapman, Bonner & Francis, 2007).

Glaser's method and Strauss/Corbin methods are more than minor differences in techniques and reflect different underlying philosophies. For the researcher with a critical realist perspective, the Glaser approach will probably be more compatible. The researcher who naturally approaches research from an objective standpoint—more of an

observer than a participant—may find that asking as many questions as encouraged by Strauss/Corbin would feel like *tampering* with the data. Conversely, a constructivist would likely find that the Glaser method “would reduce empirical objects and events to that which can be subsumed by concepts...whereas interpretative theories allow for indeterminacy rather than such causality and give priority to showing patterns and connections rather than linear reasoning” (Charmaz, 2006, p. 126).

**Summary.** Based on the above analysis, I decided to follow the Glaser method of grounded theory. For the research question I was addressing, I felt comfortable with a critical realist perspective. I was not looking for a single truth writ large; instead, I was looking for a *truth* that was applicable in a limited situation—U.S. tax accountants. Since I am not an expert tax accountant, I did not feel that I could co-create a reality with my research participants. Thus, I found it more natural to take a more objective stance. Therefore, I coded line-by-line or incident-by-incident, rather than word-by-word. In addition, my primary question in examining the data was: What category or property does this incident indicate?

### **Research Procedures**

The preceding sections of this chapter examined the *discovery* of grounded theory from the late 1960s through the current state of two separate methodologies—Glaser’s critical realist version and Strauss/Corbin’s constructivist model. After considering the alternative versions, I selected the Glaser critical realist method as being more appropriate for my research philosophy and my research question. The following sections will address the particular research procedures that were used to conduct this

study including: the selection of participants, confidentiality and protection of research subjects, preconceptions, data collection, data analysis, rigor, and limitations.

**Participants in study.** A grounded theory study requires a purposive sample—a sample of individuals who have the ability to address the research question. Since the research question asked the participants to discuss their professional journey in developing expertise as tax accountants, the sample was restricted to individuals identified as expert tax accountants. As noted in the second chapter, identifying expertise is problematic in domains that do not have competitions or established protocols for determining or ranking expert behavior. Unfortunately, tax accounting is a domain without a clear-cut means of identifying who is (and who is not) an expert. Therefore, this study used a form of triangulation—including minimum education, certification, experience and nomination to identify expert tax accountants for this study.

***Education and certification.*** Participants had at least a bachelor's degree in accounting (or equivalent) or a law degree. Accountants were CPAs. Attorneys did not need to be CPAs; however, participants with law degrees had practiced in CPA firms (as opposed to having only practiced law).

***Experience.*** Experts need practical experience, but many years of experience do not guarantee expertise. Benner (1982) noted that a significant number of nurses fail to achieve the level of expert in nursing. Many of them attain the level of a *competent* practitioner, but do not advance to the higher levels of expertise—proficient and ultimately expert. It is likely that a fair number of tax accountants may also fail to achieve the level of *expert* despite ten or 20 years of experience. However, while

experience does not guarantee expertise, expertise requires years of experience.

Therefore, participants had at least ten years of experience in tax accounting.

*Nominated sample.* A reasonable indicator of tax accounting expertise in accounting firms is leading the national tax practice for a tax sub-specialty. For example, the leader of the international tax practice would have specialized in international tax issues for many years and would be an in-house expert in this discipline. The initial sample included four individuals who led national tax practice areas in a single firm (referred to as CPA firm A). These individuals met the minimum education, certification and experience requirements, and; as leaders of their practice areas, were recognized for their expertise in their tax sub-specialty. An additional professional from that national tax practice was nominated by one of the original interview subjects.

Ericsson & Charness (1994) indicated that individuals may not be very effective at correctly identifying who is an expert. Knowledge is often so specialized that individuals outside of the specialty area may not be accurate in terms of knowing who truly is an expert. For example, an *expert* audit partner may not be able to identify expertise in taxation. In addition, even a tax expert in an unrelated area of taxation may not accurately identify expert performance. However, the nominated individual not only had the requisite education and experience, but she was also nominated by an expert from CPA firm A who worked extensively with her on related projects; and, thus could make an accurate assessment of her expertise.

While the sample included five individuals from CPA firm A, the participants reflect backgrounds that are broader than that firm. None of the experts *grew up* in the

firm, but instead, worked for other firms earlier in their careers. At the time of the interviews, only three of the five experts continued to work for the CPA firm A. The other four experts had either never been affiliated with CPA firm A or their relationship had been limited to serving as an external, expert instructor for their training and development programs. Therefore, this study was not a case study on the process of developing expertise in a single firm.

*Theoretical sample.* In a GTM study, as research progresses the sample will evolve into a theoretical sample. It is not possible to delineate the characteristics of the theoretical sample because the nature of the sample is not known until the core concept is identified (Walker & Myrick, 2006). After I had identified the core concept, the categories, and was refining the properties of the categories, I reflected on the practice interview I conducted with a tax professional who self-identified as a non-expert. I realized that I needed to interview additional non-experts. Thus, my theoretical sample included three non-expert tax professionals (including the initial practice interview).

*Categories excluded as participants.* Three categories of tax experts were excluded. First, the participants did not include individuals who only had practiced as tax attorneys. Tax accounting experts may have had law degrees, but they must have practiced as tax accountants. There is overlap in the knowledge and even in some of the work of tax accountants and tax attorneys, but they represent two separate professions. The second type of tax expert that was not be included as a participant was the tax generalist who specializes in client service. Tax generalists have knowledge about a broad range of tax specialties and can identify issues or opportunities. However, these

generalists do not have the deep technical expertise to address tax issues. Instead, they need to identify the appropriate specialist to handle the issue. A tax professional can be an expert at client service; however, this may be a different type of expertise from technical-tax expertise. Therefore, the process of developing this type of expertise may be different. Finally, the participants only included individuals who specialized in the tax laws of the United States. Tax professionals who specialized in foreign tax regimes were excluded.

*Identifying and soliciting participants.* For this study, an appropriate sample included participants who were experts in tax accounting. As the GTM research process continued, I also determined the need for a theoretical sample of experienced, non-expert tax professionals.

I had little difficulty finding tax professionals who both met the criteria for the study and were willing to submit to an interview. In all but one case, I was able to set up an interview after sending a single email request. (Representative text for these emails is included in Appendix A.) Only one expert indicated that he was too busy to participate in the study. The three experienced non-experts that I interviewed also agreed to an interview after a single email. One reason that these individuals were willing to submit to a one-hour interview is that I had worked with many of these individuals over the almost ten years that I was the director of tax education for CPA firm A. I was not close friends with any of the participants; however, with many of them, I had built a level of professional trust and respect.

In addition, I knew that they met the criteria for the study: they were either CPAs or attorneys who worked as tax accountants, they had been in the field for at least ten years, and they were recognized by their firm (and often had a national reputation) for their technical tax expertise. In fact, several of these individuals were the technical-tax experts that caused me to develop my research question. However, while I knew they met the criteria for the study, I was largely unaware of their past experience and education. For example, I generally knew whether or not they were attorneys, but did not know where they went to school, how many degrees they had, or when they earned their degrees.

The sample for a grounded theory study needs to be appropriate and adequate. The sample was appropriate because the participants had the life experience under examination—they were technical-tax experts. The sample met the criterion of being adequate when theoretical saturation was reached: the same information was heard, information from previous interviews was confirmed, and no new themes are identified. I determined I had reached theoretical saturation after I had conducted 12 interviews—nine interviews with technical-tax experts and three interviews with non-expert tax professionals.

**Confidentiality and protection of human subjects.** This study complied with all requirements for human subjects' protection. The interviews did not begin until the study was approved by the Institutional Review Board. While I was not required to obtain informed consent from participants, they were provided with a letter which documented their rights as a participant and my responsibility as a researcher. (Appendix B).

Although the research participants are not from a vulnerable population and their life stories reflect positively on them, I have endeavored to maintain confidentiality. I have used pseudonyms when referring to the participants and have used generic names for identifying information such as their past employers, cities in which they have lived, and universities they attended.

To ensure the data was secure, I downloaded the recording to my password protected personal computer. Then, I transcribed the interviews myself and saved them into a password protected file identified only by their initials. In my field notes and GTM memo notebook, I also referred to participants using their initials rather than their full names.

**Conducting the interviews.** The data was collected in individual interviews. Focus groups were initially considered, but that methodology was rejected because of the difficulty of scheduling six or more senior tax professionals for a meeting. First, coordinating that many schedules would be challenging. Second, these professionals are located throughout the United States so it would not be possible to get them to the same location. Finally, these professionals were asked to disclose information that could be personal: How did they develop their expertise? They might be hesitant about disclosing personal information in front of their peers.

The interviews were held from July 2012 through December of 2012. Six of the interviews were conducted in person and six were conducted on the phone. I did not detect a difference in quality between the in-person and telephone interviews. All of the sessions were recorded with a digital voice recorder.

I started the interviews by describing the purpose of my study. The following is a representative transcript of how I began each interview:

“Here’s what it really truly is—just you telling me your story. I have questions, but what I’ve found is that if I set the stage, everyone just tells me what happened. The context is that my years of working at CPA firm A, I saw a lot of people who had a lot of experience—and they were competent at what they did. But there was just this very small number of people that went beyond that—they had this expertise. They really knew on a much deeper level, and my question really was, so how did that happen? You don’t need to come up with what you thought happened, but what did happen. To start, did you always know that you wanted to be a tax accountant?”

For most of my interview subjects, this was all the prompting they needed to relate their experience. While I had an interview guide with a series of questions (Appendix C), I found that I did not have to ask many questions. Over the course of relating their stories, the questions were addressed. At the end of the interview, I often asked one or two questions from the interview guide. However, I found that answers to these questions were not as rich as the narrative they told without specific questions.

I did add two interview questions that emerged from the earlier interviews. In the first interview, Josh, who is not an attorney, mentioned that he had considered earning a law degree and wished he had the research and writing skills that he came with a legal education. In subsequent interviews with those who were not attorneys, I asked whether they considered earning a law degree or whether they felt limited in their careers because

they were not attorneys. The second interview question that I added had to do with puzzles. Frank mentioned that he found that people who enjoyed puzzles tended to like tax research. Thus, in later interviews, I asked whether that individual enjoyed puzzles.

The interviews generally lasted about an hour. I had one subject who was a very quiet and, perhaps, introverted individual who spoke for only 45 minutes, while my most outgoing participant spoke for over 90 minutes. Generally, I did not take notes during the interview although I would occasionally write a follow-up question to a particular anecdote. During the in-person interviews, I needed to maintain eye contact and focus. On the phone interviews, I also found it more effective to reduce distractions and to really listen to their stories.

**Data analysis.** The key aspects of data analysis in a grounded theory study include coding, memoing, constant comparative analysis, theoretical sampling, and theoretical sorting. Data analysis continues until theoretical saturation is attained. In GTM, data analysis is an iterative and continuous process. Analysis begins as soon as the first data is gathered. Immediately after the first interview, I took field notes and began to memo, i.e. capture my thoughts and insights.

I transcribed each recording verbatim into a Word document. To facilitate constant comparative analysis, I created an Excel spreadsheet which was designed to sort, filter, and create pivot tables with the data and then return to the original interview line-by-line in chronological order. Once I had created the Excel template (referred to as the constant comparative spreadsheet), I copied and pasted each transcribed interview line-by-line or incident-by-incident into separate cells in the spreadsheet. When I had entered

all of the transcribed interviews into the constant comparative spreadsheet, I had over 1200 rows of data. An excerpt from the constant comparative spreadsheet is included in Appendix D.

Walker and Myrick (2006) note that in the Glaser model coding is divided into substantive and theoretical coding. Substantive coding is further divided into open and selective coding. I began open coding as soon as I transcribed the interviews and entered them into the constant comparative spreadsheet. In the open coding phase, I examined each transcript line by line and assigned codes. My initial codes were often inter-vivo codes—they reflected the exact words of the participants, and; often the codes were phrases rather than single words. Glaser (2003) recommends that if an idea that needs to be captured occurs to the researcher during the coding process, the researcher should stop coding and immediately memo to ensure the idea is not lost. Thus, I kept my memoing notebook next to the computer and stopped and wrote short memos as I was coding the data.

***Substantive coding.*** The open coding process continues until the core concept is identified. Glaser has a list of nine attributes of the core category. Two of the attributes of the core category are that they must be central to the question and it must recur frequently in the data (Hutchinson & Wilson, 2001). Identifying the core concept requires diligence in continuing to use constant comparative analysis—going to the data, reflecting, comparing incident to incident, and comparing new data to existing categories. I did not identify the core concept until I had coded all of the data. After this initial coding, I had 157 separate codes. I then *cleaned up* the codes. For example, I corrected

misspelled words and changed codes from plural to singular. By making these changes, I slightly reduced the number of individual codes and was able to use the filter function in constant comparative spreadsheet more efficiently. Next, I began methodically comparing code to code asking: Is this code the same or is it different? This process cut the number of codes in half.

During this process of comparing codes, I identified that these professionals *learned* to be technical-tax experts. But, of course, they learned to be experts. Since technical-tax expertise is not innate, it must be learned. The real question is how did they learn? After continuing the constant comparative process, I identified the core concept: conducting research to address real-world tax issues.

Once, I had identified the core concept, I entered the phase of selective coding. My constant comparative analysis continued, but now I was limiting my comparison to the categories and the properties of categories that related to the core concept. During this phase, my memos changed from one or two sentences to many paragraphs of text. At this point, I began memoing into Word documents rather than handwriting them in a notebook. Eventually, these memos became the text for the fourth chapter of this dissertation.

As substantive coding concluded, theoretical coding ensued. In theoretical coding, “broken pieces of data are brought together” (Polit & Beck, 2001, p. 581). In theoretical coding, I continued to engage in constant comparison; however, I also revisited my literature review. I conducted additional research on theory building and reread existing

theory of expertise. As the theoretical coding continued, I continued to memo and theoretically sort until my thoughts and insights resulted in three interconnected theories.

**Preconceptions.** The goal in GTM is to have the theory emerge from the data. It is important that researchers are aware of their preconceptions to guard against forcing the data to conform to a pre-existing theory. Since I had observed experts in tax accounting for a number of years, I had thoughts regarding tax expertise. First, I believed that an individual needs a threshold level of intelligence to achieve expertise. I did not think the professional needs to be a genius—just smart enough. Second, it appeared that experts were willing to work hard and persevere. A difficult issue is a challenge rather than a roadblock. Third, experts need to learn from their mistakes. Experts make many mistakes, but they make new mistakes. Finally, I believed that gaining expertise means having many years of high-quality, practical experience and that much of the daily work of tax accountants (e.g. compliance work) may not provide high-quality on-the-job experience.

**Establishing quality in this study.** While quantitative research methodologies have agreed upon criteria for assessing the quality of studies—including validity, reliability, generalizability, and objectivity (Tracy, 2010), these criteria are not appropriate to evaluate the quality of a qualitative, grounded theory methodology. According to Glaser (2003), “[t]he difference between the particularistic, routine, normative data we all garner in our everyday lives and scientific data is that the latter is produced by a methodology. This is what makes it scientific” (p. 1). Producing a high-quality grounded theory study requires rigorous adherence to grounded theory

methodology. It means staying open to emerging concepts and not allowing preconceived ideas to influence the theory. Key criteria that promote a quality grounded research study include: rigor in following the grounded theory methodology, fit, relevance, workability, credibility, and auditability. The following paragraphs will detail each characteristic and discuss how these standards were incorporated into this study.

***Following GTM.*** A grounded theory study must begin atheoretically. The research should avoid imposing preconceived ideas on the theory. Although GTM does not explicitly discuss bracketing, I believed it was important to fully document preconceptions prior to the study. Since I was interested enough to conduct the study, I had conjectured about what promotes the development of expertise. I captured those preconceptions and referred to them as the study progressed. One preconception I had was that much on the day-to-day work of tax accountants is routine and probably does not lead to developing expertise. From my first interview, I heard dismissive comments about compliance work. I returned to the interviews to make sure that I had interpreted their comments correctly and that I had not said anything that would have led the participants to make those comments.

Before I began the interview process, I had conducted a thorough literature review on expertise; thus, I had considered various theories of expertise. I found that the open coding process promoted an atheoretical approach to data analysis. I coded each line independently of the code used in the previous line. I was not looking for themes; instead, I tried to capture the essence of that sentence. By the time I reached theoretical

coding, I had to revisit the literature review to identify any relationship of the core concept, categories, and properties of the categories to existing theory.

***Fit.*** A number of researchers discuss the importance of fit—does the theory fit the data. Lally (2006) indicated that if the researcher forced preconceptions on the data, there will not be a good fit between the theory and the data. Fit arises when the GTM is followed scrupulously--when the researcher follows constant comparative analysis continually returns to the data, memos insights and thoughts during the coding process, and continues to theoretically sample until theoretical saturation has been attained. As I compared the theory to the data, I found that I could use the data from each of the nine experts, insert it into the three theories, and predict they were likely to develop technical-tax expertise. Likewise, I could take the data from the non-experts, and predict that they were less likely to develop technical-tax expertise.

***Relevance.*** Tracy (2010) suggests that a high-quality qualitative study should be “relevant, timely, significant, interesting, or evocative” (p. 840). The research question explored in this study—How do individuals develop technical-tax expertise?—is relevant and significant to non-expert tax professionals who seek to develop technical-tax expertise. This topic is also important for those tasked with developing technical tax expertise including firms that employ tax professionals, HRD professionals, and tax faculty at colleges and universities.

***Workability.*** Workability addresses whether the concepts presented in the theory sufficiently account for the actions and variability of the group (Hutchinson & Wilson, 2001; Lally, 2006). I addressed workability by scrupulously using constant comparative

analysis to return to the data. In addition, I used thick, rich description to ensure the concepts reflected the life experience of the participants.

**Credibility.** According to Patton (1999), all qualitative research, not just GTM, is dependent on the ability of the researcher to design and conduct a study that follows the research methodology. This requirement is especially important for GTM since it such a new methodology. As a grounded theory researcher, I cannot claim credibility based on years of experience with this methodology. Thus, before embarking on the research, I conducted an exhaustive study of GTM including the history of grounded theory, the key elements of a grounded theory study, a comparison of the Glaser and Strauss/Corbin methods.

While I did not have previous experience with GTM, I have an extensive background in working with technical-tax experts as well as tax professionals who were experienced non-experts. I have a masters' in taxation degree, I am a CPA (inactive), and I was director of tax education for a national CPA firm for almost ten years. This background allowed me to enter the research with knowledge of both the academic and workplace environment for tax professionals.

**Auditability.** Chiovitti and Piran (2003) state that auditability will allow another researcher to follow the method. Essentially, auditability means *show your work*. Without careful documentation, a grounded theory study would be a black box where data goes in and a theory is miraculously revealed. To remove the mystery, I carefully documented my preconceptions, my thoughts, and my insights throughout the process.

Since, memoing is a key part of the grounded theory methodology, I rigorously memoed and kept field notes.

The constant comparative spreadsheet allowed me to track the coding process. In addition, I had substantial memos describing the process of identifying categories and the properties of the categories.

**Limitations.** While I endeavored to design a study that could best address my research question, there are inevitability limitations. First, the study was based on interviewing only 12 professionals—nine technical-tax experts and three experienced non-experts. This sample size is common in GTM studies. Tracy (2010) suggests that the amount of data can be measured not only by the number of participants but also by the level of analysis. “Decisions about how much data to collect also intersect with the level of analysis. Close line-by-line data analyses can be rigorous even when using several lines of transcription.”(p. 840). The twelve interviews translated into over 1200 lines of data to code and analyze.

The small size of the sample was somewhat mitigated by the quality of the interview subjects. I felt very fortunate to have found nine technical-tax experts willing to submit to a one-hour interview. I had a backup list of additional experts to contact; however, after the final interview (with the ninth expert), I determined that I had reached theoretical saturation—I was not uncovering any new categories or properties of the categories.

Another limitation associated with the sample is that I had some relationship (even if it was very limited) prior to the interview. This prior relationship made it more

likely that the participants agreed to an interview and I also believe it may have increased their willingness to discuss their personal journey. An additional limitation of the sample is that many of the participants had been affiliated in some way with a single national CPA firm. However, only three of the experts are still employed by that CPA firm and none of experts began their careers in that firm.

Data was collected solely through the use of interviews. Half of the interviews were in person and half were on the phone. Often, in a GTM study, you collect data using multiple means. However, this question relied on the life experience of the participants. Conceivably, I could have verified their academic backgrounds, determined the accuracy of when they became CPAs or were accepted to the bar; however, there would have been little value in verifying that data from alternate sources. The most valuable aspects of the data were the quality of their stories. The depth and feeling with which they relayed important milestones in their professional careers provided the rich description for this study.

The final significant limitation was that this study was conducted by a single researcher. Ideally, I would have liked to have others conducting interviews so that we could combine our data and jointly code, recode, and discuss the concepts. However, a PhD dissertation is conducted by an individual. Thus, I relied on the perspective and feedback from my committee.

#### **Chapter Four Analysis**

The purpose of this grounded theory methodology (GTM) study was to identify how professionals developed technical-tax expertise. Through the use of constant

comparative analysis, I determined a core concept, identified categories, and described the properties of these categories (i.e. the variables). In this chapter, I will first describe the process I used to conduct the interviews and to determine when to cease interviewing. Next, I will provide an overview of the interview subjects. Then, I will discuss how the core concept was identified and the nature of the core concept. Finally, I will examine each of the categories in detail focusing on the properties of these categories (i.e. the variables) and how these properties were identified through constant comparative analysis of the interview data. At the conclusion of this chapter, the building blocks for a developing the GTM theory will be in place.

### **Overview of Interview Participants**

To identify how one becomes an expert tax accountant, I interviewed nine technical-tax experts and three tax professionals who did not have expertise in a technical-tax specialty. Although my initial sample was limited to technical-tax experts, I began my research by conducting a practice interview with a tax professional that self-identified as a *non-expert*. Following my eighth interview with a technical-tax expert, I reflected on the practice interview with the non-expert and determined that I needed to expand the sample to include tax professionals who were not technical-tax experts. In a GTM study, researchers typically determine that they must alter or expand their sample based on data from earlier interviews, a process known as theoretical sampling. Therefore, the three non-experts I interviewed were identified through theoretical sampling. Then, after interviewing nine experts and three non-experts, I was no longer identifying new categories or properties of categories. Instead, the interviews were

confirming the core concept, the categories, and the properties of the categories—I had reached theoretical saturation, and; thus, concluded the sampling process.

While each interview subject had a unique story, beneath the surface they shared similar experiences in developing technical-tax expertise. One commonality was that no one knew at a young age that he or she wanted to be a tax accountant. In fact, my opening question, “Did you know from childhood that you wanted to pursue a career in taxation?” always elicited a laugh. If I would have been exploring the development of expertise in medicine, I might have gotten a different response; but, typically, children do not dream of growing up to be tax accountants. Even the two individuals whose fathers were CPAs did not think about a career in taxation. Most of these experts did mention that they were “really good in math” so they looked for undergraduate majors that required quantitative skills. However, besides their interest in taxation developing after high school and that everyone was comfortable with numbers, each journey to tax expertise took a different route.

Table 3 illustrates that the experts had dissimilar educational backgrounds. Not everyone had an undergraduate degree in accounting. All of the professionals had at least one graduate degree: three are attorneys, two have PhDs, four have MSTs (masters of science in taxation), and two have other master’s degrees. Their work experiences (shown in Table 4) were also different. All but one individual worked for a Big Four or Big Eight CPA firm; however, two of these professionals joined the Big Four after they had already developed their tax expertise. In other words, it appears that tax accounting expertise can be developed outside of the Big Four CPA firms.

**Table 3***Educational Attainment*

<u>Tax Expert</u>	<u>Bachelor's Degree</u>		<u>Master's Degree</u>		<u>JD</u>	<u>PhD</u>
	<u>Accounting</u>	<u>Other</u>	<u>MS Tax</u>	<u>Other</u>		
Art	X		X			
Dave	X		X			X
Frank		X			X	
Hank	X					X
Jennifer	X		X			
Josh	X		X			
Karen		X		X		
Pete		X	X		X	
Sarah	X			X	X	

The work histories of these experts revealed that while there is no single path to developing expertise as a tax accountant, their journey to expertise was similar. Whether you began working as a staff accountant in a CPA firm after attaining your bachelor's

**Table 4***Work Experience*

<u>Tax Expert</u>	<u>CPA Firms</u>			<u>Law Firm</u>	<u>Other Employers</u>		
	<u>Small</u>	<u>Mid-sized</u>	<u>Big 4/Big 8</u>		<u>Corporation</u>	<u>IRS</u>	<u>University</u>
Art		2	1				
Dave	3		1				2
Frank		3	1		1		
Hank	1		2				3
Jennifer	2	3	1				
Josh	1	2					
Karen		2	1				
Pete			2	3	1		
Sarah			3		1	2	4

Note: Numbers indicate order of employment. For example, 1 = first job, 2 = second job.

degree in accounting or you began working for a corporate tax department while working your way through law school, the underlying dynamics of learning to be a tax expert were comparable.

**A tale of two experts.** As reflected in Tables 3 and 4, the nine experts I interviewed had very different academic and workplace backgrounds. If the nine experts were arranged on a continuum from “likely to develop expertise” to “unlikely to develop expertise,” Frank and Josh would be on opposite ends. While Frank’s academic and work experience were highly favorable for developing expertise, Josh entered a very hostile environment. To establish the amount of variability in developing tax expertise, this next section will describe Frank’s and Josh’s experiences. Frank entered the field of taxation many years before Josh; and, while Frank is still active in the field, he has retired from the CPA firm in which he was a partner. Josh is still building his career. His expertise in his discipline has been recognized within his firm for some time and he is also beginning to gain a reputation for expertise outside of his firm.

**Frank’s story.** Frank was raised to believe that success came from hard work. Although Frank’s family was financially comfortable, from the age of 12, Frank was expected to spend his summers working in the fields. Frank’s father, who dropped out of school to help support his family after his father’s death, had become a successful business person, but wanted more for his son and believed that the professions offered better opportunities. “So my dad gave me a choice, I could either be a doctor or a lawyer. So that was pretty simple...doctor, lawyer or death. And that is absolutely a reality.”

Frank attended a nationally recognized university and decided to major in prelaw since he felt law was a better fit for his skills and interests than medicine. In his undergraduate program, he took a variety of courses including Constitutional history, English as well as a number of accounting classes; however, he did not develop an interest in studying taxation until he was in law school. In law school, he took tax classes, which he liked and did well in. Then, he did a summer clerkship which allowed him to do estate planning as well as general tax work. Upon graduating from law school, he was offered a position in the tax department of a Fortune 100 corporation. Frank was the first attorney they hired directly out of law school.

“They had a policy that I had to go through. I had to be voted on and signed off by the president at [X Company], the general tax counsel, because they had always required that someone have at least six years’ experience outside in a law firm before they hired anybody and give them the designation, tax counsel. I was then the first person that they took straight out of law school. So everybody who was a tax lawyer for [X Company] was probably a good ten to 15 years older than I was. So I was the young kid who was supposed to go through all the training and they were experimenting with this Lexus/ Nexus machine on how to do automated electronic research. And so, that helped a little bit too. I was the first guy that could do electronic research compared to everybody else who was doing that traditional Shepardizing through books. So I was able to understand the digital.”

Frank joined the tax department at the start of the digital revolution for legal research, but more important to his development of expertise, he began his career in

taxation as new area of tax law was emerging. This new area of taxation directly impacted the industry in which his corporation was one of the leading players. Since this area of tax law had the potential to drastically increase the tax liability for his firm, developing strategies to defend against and influence this tax law could result in significant tax savings. In other words, the corporation had both the means and incentive to invest in a department of attorneys, accountants, and economists fully devoted to this area of taxation.

Frank joined the firm and focused on this one area of tax law. According to Frank,

“They just threw me into the water...I had to figure this out and learn it and I was given the independence to do that...I got plugged into some very significant cases and co-counsel with a bunch of large law firms. And they basically just gave that to me. So I was very, very fortunate that they kind of let me take that and I ended up with some of the largest, significant cases of the time.”

Law school generally focuses on the theory rather than practical application.

When I asked Frank specifically what he was doing in his first job to develop expertise in this area he stated,

“Well, I went through and read brief after brief, and then I drafted brief after brief and I did the research and looked at all the opinions...Just going through hundreds and hundreds of documents and drafting up responses to interrogatories and doing the research. And, over about a nine-month period of intense indoctrination of just ‘I’ve got to figure this out or I’m not going to be able to

respond’—so it was just a matter of intense responsibility of going through that. And the thing about it was, nobody else knew anything about it because it was pretty much a new area ... So we were creating the pathway that everyone else would be following.”

Not only did Frank have the opportunity to delve deeply into the tax law, but he also had a team of people to support him.

“I was placed underneath an individual by the name of Ed who was one of the super bright guys and he kind of steered me. And, I worked with him on the legal side and I worked with four other tax accountants that were in that and we worked within a team...”

In addition, Frank had the opportunity to work with the experienced attorneys from the outside counsel. Frank was recognized as an expert in his area of taxation quite early in his career.

“So one of the keys is that I was one of the first people through.... And one thing, the interesting thing is, at least in my experience, is that to the ABA [American Bar Association] (or looking at taxation or whatever the area is) if you’re the guy to litigate the significant cases, then they ask you to speak on those. And it’s the same thing at the IRS if you’re the guy who wrote the regs—you’re the expert.”

As this tax domain expanded, Frank continued to work on issues in the new branches of this discipline. Consequently, his expertise continued to grow and develop. Over the years, his career has led him to developing consulting practices in this area and leading

the practice area for a Big Four CPA firm. Frank has retired from the CPA firm, but remains active in the discipline.

*Josh's story.* As early as high school, Josh exhibited determination, perseverance, and the willingness to simply work harder than anyone else. Josh, who is well under six feet tall, played on his high school football team.

“...[E]veryone I played with was much larger and I was playing on the offensive line and so I spent more time in the weight room and in the summers practicing and working out to be able to compete. Ultimately, I ended up my senior year All Conference and I was six inches shorter than anybody else on the offensive line. So that showed, I guess, whether it wasn't necessarily mastery at being the absolute best at what I was doing, but getting the most out of what I had.”

That attitude of working hard to defy the odds seems to be the underlying theme for Josh. Josh attended a private liberal arts university with a very small accounting program. Fairly early in his undergraduate career, Josh decided to focus on tax.

“I had my degree in accounting I was going for, but I just had this feeling that I wasn't going to be an auditor for whatever reason. I always had this thought of the legal professional and just realized that tax would be a good fit there.”

Although Josh graduated magna cum laude, he struggled to find his first job. None of the big four CPA firms interviewed at his college. According to Josh, “My uncle played golf with a few guys who were at [Big 4 firm] and he got me an interview and, you know, they didn't even really know where the school was.” Josh had to find his first professional job on his own.

“In some ways I was really lucky. It sure didn’t seem like it at the time, but when I got out of [College A], there was no on-campus interviewing—there was nothing. The best I got from them was like a website address to find a book that had every accounting firm in the state of [X]. So, I had to send out 100 resumes. I think I got five interviews out of it and got one offer. I got a job working with a small firm in [city Y]. But what it allowed me to do was to really focus on tax. ..Where to them, it was like ‘He’s going a good job so what he wants to focus on is fine.’”

Josh quickly determined that he did not want to be an auditor.

“I worked on one audit in my life and was able to realize right away that wasn’t for me. I kind of knew that, so maybe it was a self-fulfilling thing, but this was not me. Tax allows you to really think, be a little more creative in some ways.

That was something that I thought I would enjoy and I did.”

Josh first had the opportunity to delve into partnership taxation since the small firm that Josh joined did quite a bit of partnership work, but did not have any real partnership expertise in their firm.

“Because it was a small firm with no real expertise, so they were fine with me spending lots of time on that kind of stuff... When you think about how you become how do you gain expertise in something, it’s from getting the opportunity to do it, I think. So even though I was at a small firm I had the opportunity to do the work.”

Josh did not have the luxury of only doing research and tax planning; he also had to do the traditional, repetitive compliance work. Josh's strategy to spend more time on research and planning was to streamline his compliance process.

“I was very efficient. So I would do a lot of value billing with different client work—spend maybe eight hours on something and bill ten to twelve. And so, all the work was getting done, but I had the flexibility and bandwidth to take on other projects.”

After several years, Josh left the small, local firm to join a larger firm in the second tier of national firms. Josh had not yet begun to focus on the tax area in which he has become an expert.

“When I first went to X CPA firm it wasn't a focus in corporate and M&A, it was a focus in anything that wasn't compliance. So it was more of just a general consulting type of idea, get into more interesting things...What kind of planning opportunities you could have? I always knew I had a focus beyond compliance.”

During his years at the firm, he earned a master's of taxation degree by taking classes in the evening. Josh thought that the program probably was helpful. His tax research and corporate taxation classes were useful—although overall, he was not enthusiastic about the experience.

A pivotal event for Josh was the opportunity to attend a multi-session, in-house tax academy designed by the national tax function in his firm. This academy involved an in-depth study of this complex area of taxation.

“That was the first time that I really started focusing on corporate and M&A. That to me was the real trigger that this is what I want to do. That was the thing that was the most like being a lawyer per se—the least like being this compliance person. Whether I wanted to build the expertise because I really loved that area or just knew I didn’t want to do compliance—or a combination of both, I’m really not sure.

That was the thing that really triggered it, and that was the thing...that made me look elsewhere too because I wanted to focus on that. I went to that corporate tax academy, had a great experience, and then they wanted me to go back to compliance. And I thought—that’s not going to work. So then there was the opportunity to jump.”

Josh left this firm to join the national tax department of another second tier national firm. The new firm was just developing their national office; and, Josh joined intending to work exclusively in his area of expertise. By this time, Josh was very clear that his goal was not simply avoiding compliance work, but focusing his attention in his chosen field. However, two days after joining the new firm, he was asked to do tax work in unrelated area.

“I said, ‘time out.’ I came in to focus on corporate... That if I wanted to focus on this, they were going to let me rather than have me go somewhere else. But that happened within a couple of days. Again it was perhaps standing up—‘No, I want to go in this direction.’”

Once he established that he was serious about focusing in this specific area of taxation, Josh had the opportunity to work on client projects and to attend high-level external training programs.

“The firm was helpful the first five years in terms of I didn’t have to worry about a CPE budget. I just went to whatever was there. Whatever I wanted to go to, National was ok. Whether there was true support to send Josh to wherever he wanted to go or if it was a matter that times were good, and they weren’t really looking at budgets. Either way, it was really a good situation because there were years where I went to two separate PLI conference and ALI ABA so three –two and three-day conferences. In addition to all the internal stuff I was doing.”

Josh is now the recognized expert in his tax specialty for his firm and is beginning to develop a reputation for expertise outside of his firm as well.

*A staircase or a rope?* When I picture Frank’s journey in developing expertise, I envision a long staircase. The top of the staircase was not visible from the ground, but it was sturdy, and had strong hand rails. Climbing the staircase was not easy—it took energy and perseverance, but Frank was not on this journey alone; he shared this journey with peers and a mentor. Finally, because they were developing expertise in a new area of taxation, there were not a lot of experts ahead of them on the staircase. In fact, since this was a new area of tax law, they reached the top of the staircase and began to build additional stairs to further develop the field.

Josh’s journey to expertise resembles a rope rather than a staircase. Through sheer grit and determination, Josh *muscled* himself to expertise. He would pull himself

up the rope to a ledge—look around for another rope; then, pull himself up again. In addition, he entered an established field where there was a complex, robust area of tax law to learn and there were already many experts in the field. Other professionals who were gaining expertise in his field had the advantage of working in firms that provided greater support for the development of expertise—they had staircases or at least ladders. Josh’s journey to expertise has taken longer than Frank’s and Josh may or may not eventually attain Frank’s level of national recognition; still, through hard work and determination, Josh has developed expertise in his tax specialty.

The stories of Josh and Frank were at the extremes of the experts that I interviewed. No one had Frank’s experience of walking into an environment tailor-made to develop expertise nor did anyone else start their careers in work environments that were as unlikely to produce expertise as did Josh. Josh’s story reflects a situation in which he developed expertise despite the circumstances. Josh mused, “If you’re not in an organization that acknowledges, understands and supports someone becoming an expert, it would just be dumb luck that it would happen. And that’s why I don’t think that it does happen.” It may not be *dumb luck*, but it certainly was improbable that Josh was able to develop expertise. However, if the only way to develop expertise was to have the stars align as they did for Frank—having a very intelligent, well educated, highly motivated individual walk into the perfect environment, then developing expertise would truly depend on *dumb luck*.

Yet, as different as Frank and Josh’s journeys to expertise appear, both Josh and Frank learned to be experts by conducting research to answer complex, real-world tax

problems. In addition, their experiences in getting the opportunity to do the necessary tax research reflect similar underlying structures—personal traits, the macro environment, and the micro environment.

Frank and Josh possessed similar personal traits: their intelligence was well-matched to the discipline, they had strong work ethics, they enjoyed complexity and ambiguity, and they were internally motivated—they both found their area of specialization fascinating.

They were also affected by the macro environment, which includes the overall economy and the tax law. The macro environment varies over time, but is consistent for individuals entering the field at the same time. Frank entered the field when the macro environment worked in his favor—the new area of taxation provided a *short cut* for developing expertise. Josh did not have that benefit. When Josh began his professional career, his specialty area was well established with a number of experts in the field.

The micro environment provided Frank with enormous advantages in developing expertise. The micro environment, which includes education and the workplace, is unique to each individual. Frank benefitted from having a micro environment that supported the development of expertise. First, he attended a well-known university and law school that provided a solid education and made it easier to find his first job. Josh may have received a good education at his undergraduate school; however, since that school did not have a reputation for educating accountants, it was more difficult for Josh to secure his first professional position. The second aspect of the micro environment, the workplace, is where Frank and Josh experienced the greatest difference. Frank found

himself in an *expertise incubator* the perfect environment to nurture expertise. Josh entered a work environment that was not supportive of developing expertise. However, for both Josh and Frank, interactions between their personal traits, micro environments, and macro environments along with the catalyst of *luck* led them to engage in ongoing tax research in their specialty areas which ultimately resulted in their development of expertise.

### **Core Concept**

The purpose of this grounded theory methodology study was to determine how individuals develop technical-tax expertise. In grounded theory, you continue to code and compare until you identify the core concept; then, the sampling, coding and memoing focuses on clarifying the core concept by identifying the categories that further explain the core concept.

GTM uses the following specialized terminology: core concept, categories, and properties of categories. Discovering the core concept, sometimes referred to as the core variable, is a key objective of a GTM study. This core concept reflects the underlying process under examination. However, while the core concept captures the process under investigation, this core concept by itself does not explain how, when or why this process occurs—categories and the properties of the categories provide this level of detail. The categories address the *how*, *when*, and *where*. Finally, the properties of the category (or the variables) provide a detailed description of the category. The next sections will describe the core concept, the categories, and the properties of the categories.

**The core concept for developing expertise in tax accounting is conducting research to address real-world tax issues.** Tax expertise is developed though trying to understand, identify, and offer solutions to real-world tax problems through the careful reading, analyzing, and writing—the hallmark of tax research.

Fairly early in the interview process, I identified that tax professionals *learned* to be tax experts. However, a finding that expertise in taxation is a *learned* behavior was a tautology. If expertise is not innate; then, it must be learned. As I continued to code and compare, it struck me that what was important was *how* they learned to be experts. Their college, graduate school, and/or law school educations gave them the foundation that they needed to enter the field, but did not make them experts. Various firm and professional association training may have assisted them in improving their writing and research skills and may have helped them in developing technical understanding of a well-developed area of expertise, but these training programs also did not make them experts. As I went back to the data, expert after expert related stories of reading the code, researching client issues, and writing memoranda. In other words: Conducting research to address real-world tax issues. For example, Pete earned his undergraduate, masters in taxation and law degrees while working full-time. When asked the impact of education on his development of expertise, Pete stated, “It was my doing more than the classes, to be honest with you.”

No one is *born to be a tax accountant*; instead, tax expertise is learned through encountering issues and questions and conducting research to address these questions. Through this research process, accountants learn more and more about their discipline;

continuing to better understand the interrelationships and implications from the primary tax sources; identifying new questions; and postulating new approaches, interpretations, and answers. Tax research, which involves reading the code, the regulations, revenue rulings, court cases, assorted Treasury publications, and treatises, is cumulative in that research from an earlier question will provide the platform to research the next question.

Most commonly, the real-world tax problems are identified through client issues: How can the transaction be structured to meet the client's goals in the most tax efficient manner? What are the tax implications of this completed transaction? What opportunities or risks exist for the client in the new tax law? However, preparing a presentation for a professional seminar, teaching a CPE or graduate tax class, or writing a journal article, book or treatise can also lead to conducting tax research to answer real-world problems. Whether the research comes directly from a client issue or if the research is in support of a presentation or article, to be relevant to the profession, tax expertise must be tied to real-world concerns.

### **The Four Categories**

Conducting tax research to address real-world tax issues is the core concept, but this core concept by itself does not explain why some tax professionals develop expertise while others do not. Arrayed around the core concept are categories that determine whether a tax professional has both the ability and the desire to embark on the journey to develop tax expertise. The following four categories: personal attributes, the micro environment, the macro environment, and luck, were identified as categories which explain the core concept. Personal attributes are defined as characteristics of the

individual professional and include the properties of: intelligence matched to the discipline, willingness to work hard, fascination with taxation, and tolerance of ambiguity.

Environmental factors are divided into micro and macro. The macro environment refers to the broad environmental processes that affect all tax professionals in the United States including the tax laws and the overall economy. The micro environment refers to factors such as education and the workplace. Two individuals who enter the field of tax accounting at the same time will face the same macro environment, but will experience (or have experienced) different micro environments.

Luck, the fourth category, appears to be a catalyst that interacts with personal traits, the micro environment and the macro environment to allow the development of expertise. The experts used terms such as “lucky,” “fortunate,” or “kismet” to explain how they became experts in taxation, but good fortune was not a magic wand that automatically granted expertise. Instead, good fortune provided opportunity. Then, it was up to the individual to determine whether he/she could capitalize on that opportunity.

The following section will examine each of the four categories describing the overall category and exploring the properties that define it. First, personal attributes will be examined. Next, the characteristics of the micro and macro environments will be reviewed. Finally, luck will be described as a catalyst that links the micro and macro environments to individuals with the appropriate personal characteristics to allow expertise to develop.

**Personal attributes.** Experts are individuals; therefore, it seems logical that experts must possess certain personal characteristics or traits that support the development of expertise. Thus, we will begin the examination with the first category: personal attributes. In my interviews with tax experts, I identified the following four properties (variables) of personal attributes: intelligence matched to the discipline, willingness to work hard, fascination with taxation, and tolerance of ambiguity.

*Intelligence matched to the discipline.* If someone is deemed an expert in taxation, an underlying assumption is that they must be very intelligent; and, I believe mastering the complexities inherent in taxation, requires intelligence. The nine experts that I interviewed all possessed impressive intellects. One mentioned that she was salutatorian of her high school class, while another graduated 7th out of 1,050 from his high school. Art earned the top score in his state and the third highest score in the nation on the CPA exam. Several noted that they earned high grades in college and graduated with honors. Both of the experts with PhDs attended highly ranked graduate programs. Karen noted,

“I always knew I was good at numbers and I always knew I was good at retaining random information, but I was never the best. You know like the old saying always the bridesmaid never the bride. I was always second place. Yet, I always remember my ACT score I was in the 99% percentile in aggregate—I guess my math score was in the 99% but none of my other scores were 94...92 . But my dad explained it to me that it’s because you’re really good at everything and most

people aren't like that. Most people have something they're good at and then they have something they're really awful at.”

While Pete did not directly say that he thought he was intelligent, he indicated that he had a good memory. Clearly, Pete had to be very intelligent to accomplish as much as he did in such a short period of time. Pete immigrated to the United States in the mid-60s.

When I asked him if he knew English, he said,

“I thought I did, until I got to the US and then I didn't understand anything. Because in [country of origin], they taught me UK English—British English. So when I got here, I didn't understand a word that people were saying.”

In eight years, he not only learned to speak and write in English, but he also earned a BS in Business Administration, an MST, and a JD, built an international tax department in a corporation, and became recognized as an international tax expert.

For all of the experts, their intelligence was well-matched to taxation. Everyone was good at math while also being good at writing, research, and critical thinking. Some of them noted that they did not think they would have been successful auditors. In fact, Dave related a story about his mentor, a nationally recognized expert in partnership taxation.

“George actually had a law degree...and back then, this was the '50s, they wouldn't hire people directly into the tax practice. So, they hired him as an auditor. Two years into his career ...the audit partner called him into his office and said, 'George we think we're going to have to let you go.' George said, 'Why?' 'Well, you're not a good auditor. You don't think like an accountant.’

And he said, ‘It’s because I’m not an accountant—I’m a lawyer.’ And the partner didn’t even know that. And he said, ‘Yeah, my background is in law, but you guys hired me into the audit side.’ The guy said, ‘Well maybe we’ll try you in tax and see if that works out.’ And then he becomes a superstar in tax because it’s a whole different thought process.”

Thus, these tax accounting experts had an intelligence well-suited for taxation. Some of them had started as auditors, but many of them believed they would not have developed expertise in auditing.

Several of the experts specifically stated that their success was not due to intelligence. For example, Frank dismissed the role of intelligence in developing expertise.

“I was just very fortunate being in the right place at the right time. It doesn’t have anything to do with intellect, it’s just I got direct training and I got immersion in those areas. And I think I’m just a lot stronger than anybody else because I’d really, really gone through those.”

Dave was the only tax staff accountant in his firm who already had an MST. His graduate study focused on developing a sound, foundational knowledge in technical tax, tax research, and professional writing. Therefore, he dismissed the idea that his early success was due to his intellect.

“I think they assumed that I was smarter than everybody else as opposed to having had some background that nobody else had.”

However, I think that Dave and Frank downplayed their intelligence. Both Frank and Dave were in environments where everyone they worked with was very intelligent. They were working in high-prestige firms and corporations that were able to hire the best and brightest; thus, Frank and Dave took their intelligence for granted. However, I believe what Frank and Dave were trying to convey was that raw intelligence by itself was not enough to become an expert. Interestingly, the non-technical tax experts I interviewed were also extremely intelligent and had done extremely well in college. For example, one had graduated from a very competitive PhD program. While these individuals were professionally successful, they were not technical-tax experts.

Taxation is a complex, intellectually challenging discipline. Therefore, intelligence suited to the study of taxation is required—it is necessary, but not sufficient. If you are intelligent enough, other personal attributes are also required to develop technical tax expertise.

***Willingness to work hard.*** Becoming an expert requires years of hard work. All of the experts exhibited strong work ethics long before they developed their professional expertise. Some of them were dedicated athletes in high school, others worked their way through college while supporting a family, most of them mentioned being conscientious, hard-working students in college. A number of the experts discussed how their families influenced their view of hard work. Art's role model for working hard was his father,

“I think that my Dad instilled a great work ethic in me—he was a marvelous man...He was my best friend and taught me a lot of things and one of them was you want to be successful, you've got to work hard.”

The experts often discounted their intelligence and instead attributed their success to their willingness to work hard. Pete commented,

“If I did it, anybody and do it. Let’s be honest. Because I made the effort, that’s really what it is...I never dreamt that I was going to be as high in [national CPA firm] as I as, but I just worked hard, did my job...I had to work like a dog.”

Developing expertise requires hard work over a sustained period of time. The process of developing expertise was described as evolutionary—they became an expert over many years. To be willing to work hard over time requires a belief that hard work today will result in success in the future. First, experts are willing to delay gratification—they believe in short-term pain for long-term gain. Next, working hard over a long period of time requires stamina. Most of the experts were balancing the development of professional expertise with the demands of raising a family. As Karen reflected on her work ethic, she attributed her ability to work hard to a high energy level.

“If you think about character traits, now at the age of 60, I used to tell people that I had the energy of a two-year old now I have the energy of a 21-year old. I just function at a very high energy level...and I always have.”

Finally, the willingness to work hard in the present for a future reward requires self-confidence and optimism that their hard work will, in fact, be rewarded. They were willing to persevere because they believed if they worked hard enough, they would achieve their goals. Dave suggested that engagement in sports or music for children and young adults may reinforce that hard work is worthwhile because of their reasonably short-term payoffs.

“I always describe it as a fruit fly approach. They always use fruit flies in genetic research because their life cycle is so quick. If you say, you know I can’t hit that high note. And then you practice of two weeks and then you can do it, it teaches you a lesson about how hard work pays off for you. And there are so many other things in life where the hard work won’t pay off for ten years. And there’s this temptation to quit along the way because you’re not getting the payoff along the way. But if you developed that mindset that here’s something I can’t do but I worked at it—gee whiz a week or two later it teaches you about the value about some effort.”

All of the experts spent time and effort over many years dedicating themselves to developing their expertise in taxation. However, while they all had strong work ethics, they were willing to work as hard as they did because it was a labor of love. They truly enjoyed the study of taxation.

***Fascination with taxation.*** Becoming an expert requires a great deal of effort. One of the reasons that the experts were willing and able to devote the time and energy needed was that they enjoyed their specialty area. When discussing their area of expertise, these experts used terms such as “interesting”, “intriguing”, and “captivating.” Karen said,

“I just literally ate it up. I just loved the complexity and the human—it’s technical and it’s human and its regulated and its creative and it’s just fabulous!”

As Pete reflected on developing expertise, he said,

“So I’d began to enjoy it tremendously so to me it was easy to spend a lot of time reading, learning, doing more, because I enjoyed it so much.”

Reflecting on his career in taxation that has spanned five decades, Art said,

“...I couldn’t have chosen a better a career. In a thousand years, could I imagine doing what I do—loving it so much.”

Without exception, every expert discussed how much they liked their area of tax specialty—why it was particularly appealing to them. Interestingly, no one mentioned money being a motivating factor. In fact, many of them related situations in which they decided not to take a job where they could have made more money, but they would not have been as happy. That is not to say that finances were unimportant to them. None of them had private incomes that allowed them to ignore money; money simply was not their top consideration as they built their careers. In discussing his decision to pursue a career in taxation, Hank mentioned,

“...I always loved history; and if there was any money in a history major somewhere along the line. But being of practical bent, in college, I decided that accounting made sense because it was the language of business. It’s something that you can always get a job in, etc. and survive in this world.”

However, after spending over thirty years in the field, Hank reflected,

“If it’s just money, you might end up with money, but not a very happy life. If you are doing it for the passion, you might end up with a fair amount of money, but you’ll enjoy your life.”

I interviewed three individuals who had careers in taxation, but did not see themselves as technical-tax experts. None of the non-experts indicated a passion for taxation and all three of them related situations throughout their careers where money was a primary reason that they made a career decision. The nine technical-tax experts were intrinsically motivated—they had a passion for taxation. Several of them were past traditional retirement age, but still remained active because they continued to enjoy taxation.

“I’ll tell you that I retired five years ago, but I’m still active in tax. I’m still teaching..., I’m still reviewing another article for the Journal of Legal Tax Research, so unlike a lot of my colleagues who do get burned out and have retired and want nothing to do with tax, I still read Tax Notes every day, I still write for the Tax Advisor, and other journals. I was over in England in September giving a research paper that kind of thing because I do enjoy it.”

***Tolerance of ambiguity.*** Ambiguity is defined as “a situation in which something can be understood in more than one way and it is not clear which meaning is intended” (Encarta). Simple tax research involves conducting research to find *the* answer to a tax question. For example, is the interest from the proceeds of a key person life insurance policy excluded from income of a corporation? These types of questions are unambiguous—there is a right answer and a wrong answer. However, the kind of questions that technical-tax experts address are complex and do not have a single, clear-cut answer. The issue itself may be unclear or ill-defined and the law may be unsettled. Unraveling these complex situations requires both a great deal of technical tax knowledge

and a degree of creativity. Tax experts are able to devise new ways of addressing a tax issue. Every tax expert described enjoying complexity and the creativity that is inherent in dealing with ambiguity.

Pete discussed why he preferred planning to compliance.

“I admire people who did compliance, but I wanted to do more of the planning because to me that was what was interesting, it was really depending on me coming up with new ideas, coming up with new interpretations, coming up with my way. I liked that. It really appealed to me. That’s why I spent a lot of time on that.”

Karen described that she liked her area of specialization specifically because of the complexity and ambiguity.

“A lot of people hated ERISA for the very reason that made me love it. It’s got tentacles out into every other single discipline. You never feel like you know all the answers.”

Frank suggested that his area of taxation allows for greater creativity because it is more ambiguous than other areas.

“The one thing about state and local taxation even today, if you’re looking at a federal issue, ...you can always find an answer. So there’s a tax court memorandum, there’s a ruling there’s a regulation, there’s an interpretation of a regulation, there’s a legislative history and so forth. Almost every issue you deal with on the federal side it’s black and white because there’s something that sits there. And what you try to overlay is the facts to be able to distinguish. The

interesting thing on the state and local side is in most of the cases and certainly throughout the bulk of my career—it's gray. It's something where you can postulate. So I think the exciting thing about the state and local side is that you could always craft a response.”

I conducted an in-person interview with Jane, a tax professional who was not a technical-tax expert. A few hours after our interview, she sent me a follow-up email with further thoughts on why she chose a tax career closely aligned with tax compliance.

“One point on research: Early on: I was OK with research when it is fairly black and white. I was not good at finding the gray areas. Therefore, my results would usually be “no” (black) so I would have to ask for assistance from my leader. You can't always tell the client “no” if you want to do tax planning. I like compliance since it is more black/white.”

A week after my interview with Jane, I had a phone interview with Hank. As we began the interview Hank said,

“Well, actually with the thought of this conversation, I listed ten items that I believe are essential to make somebody a tax expert or a good tax person... The first one is being able to handle ambiguity. In my experience both as a professor and practitioner, I tend to see the audit people tend to be more black and white in tax it's more ambiguity, gray areas—if you change this fact, that kind of thinking process. I like ambiguity. I'm able to handle that ambiguity. I like closure, but I also like the ambiguity before you get to closure.”

Without any prompting, Jane, who is not a technical-tax expert, concluded her interview by explaining that she prefers closure to ambiguity while Hank, a technical-tax expert, listed “the ability to handle ambiguity” as the most important characteristic for developing tax expertise. Experts may not just tolerate ambiguity; they may be drawn to it.

Frank mentioned that he has found a simple way to determine if someone would likely be a good tax researcher,

“...I’d ask a simple question: Do you like to figure out stuff? Do you like puzzles? And if they said yes, I knew that they would like a certain discipline dealing with accounting or dealing with tax that they were willing to not have an answer.”

I interviewed Jennifer, a technical-tax expert, shortly after interviewing Frank and asked if she enjoyed puzzles. Her response was “Yes, I do. I love doing puzzles.”

Experts are intrinsically motivated by their specialty area and find the work intellectually rewarding. Ambiguity makes their specialty area more interesting and compelling because it allows them to become more creative, to “figure things out.”

*Summary of personal attributes.* Individual tax professionals develop expertise; therefore, you would expect that personal characteristics are very important in determining the development of expertise. Tax experts are intelligent, but their intelligence is well-suited to taxation. They have strong quantitative skills because tax accounting requires working with numbers, but they also need strong verbal skills to read and interpret complex legal literature. In addition, they need to be systems thinkers in

order to consider the implications of future changes in the business, the economy, or the tax law as they work with their clients. However, most of the tax experts downplayed the role of their own intelligence in their development of expertise. I do not believe they were saying that unintelligent people can develop technical-tax expertise; instead, I believe they meant that being smart simply “gets you in the door.” Developing expertise requires that you put your native intelligence to work.

Likewise, experts have a very strong work ethic. Many of the experts I interviewed attributed their success to hard work. Some indicated that they were willing to work harder than others. For example, Pete told the story of when he retired as a partner in his Big Four CPA firm,

“When I left, some people were laughing that they were splitting my job in three. I was doing the work for three—I never realized that, but for me I was just doing what I had to do. Oh yeah—I was always the early in the morning and the last to leave.”

However, the willingness to work hard is tied to their fascination with taxation. Experts are in part willing to work as hard as they do because they love their tax specialty. That does not mean that it’s always fun, but hard work easier to sustain over the long haul if you enjoy the discipline. Non-experts are often very intelligent, and non-experts often have strong work ethics; however, the non-experts did not have the strong love of the discipline—the intrinsic motivation. Many of them relied on extrinsic rewards such as money to motivate them to engage in hard work.

Finally, one of the key differentiators between experts and non-experts was that experts embraced ambiguity. Experts loved the complexity in their specialties and some actually liked their specialty because it was more ambiguous, more complex than other areas. The complexity and ambiguity allowed them to be more creative.

The personal traits deposit you at the starting gate in developing expertise; but expertise in an applied discipline like tax accounting, requires practical, real-world experience. No matter how intelligent, motivated, or hard-working—no matter how much they enjoy their discipline; tax experts need to hone their craft with actual tax issues from the real world. Therefore, expertise is influenced by both the macro environment, which includes the economy and the tax system, and the micro environment, which includes formal education and the workplace.

**Macro environment.** Tax experts develop their expertise in a macro environment which includes both the general economic conditions in the United States and the United States tax law. Individuals have some control over their micro environment. They can choose where they attend college, whether they continue on to law school or graduate school; and, to some extent where they will work. The macro environment is imposed on the individual rather than controlled by the individual. Individuals entering the profession in the same year would be subject to the same macro environment, but the macro environment changes from one year to the next.

*Economic climate.* The experts I interviewed began their careers over a period of four decades from the 1960s to the 1990s. Some of these experts entered the profession during a strong economy where graduating with good grades virtually guaranteed you

would get a good job. Others, who graduated during a weak economy, found getting that first job to be more difficult.

Karen graduated from with an undergraduate degree in economics during an economic downturn.

“I had very good grades, but I couldn’t get a job... And when I finished [her master’s in accounting], it was 1975 and a completely different work experience.”

Hank also graduated with his bachelor’s degree during a weak economy.

“I graduated in 1970 and the market was really bad. It was the whole high tech, aerospace, so the economy was in bad shape, so I went to work for my dad as a local CPA. He had a two-man practice and worked there for two years until the economy got better.”

The overall economy also affected opportunities throughout their careers. Josh described a situation in which he “drew a line in the sand” after starting at a new job. He was hired with the understanding that he would work in a specific area, but was asked to do projects in an unrelated specialty.

“About two days into that job, I said, “time out.” I came in to focus on corporate... That if I wanted to focus on this [corporate], they were going to let me rather than have me go somewhere else. But that happened within a couple of days. Again it was perhaps standing up. ‘No! I want to go in this direction’— which in a tough economy is lot harder for people to do right now.”

A weak economy makes it more difficult to find the first job and it also makes it riskier to decline work that will not help you develop expertise.

*United States tax environment.* A change in the tax law can be a tremendous opportunity to jumpstart the development of expertise. Whenever there is a substantial change in the tax code, a new tax specialty area opens; and in a new tax area, you are not waiting in line behind individuals with years of experience. Four of the nine experts I interviewed entered their specialty as its inception.

Frank entered his specialty as the first major court cases were defining his field. He became a recognized expert in the field quite early in his career because he had been involved in the seminal court cases. Karen also happened to enter a field that was just being developed.

“So that was the serendipitous thing that [CPA firm] gave me ERISA and two capital intensive industries and depreciation and investment tax credit as my specialties. Just landed me in the middle of the tax credit stock ownership plan...brand new concept, brand new industry—huge tax incentives that people were really interested in exploring,”

Within eight years of entering the field of accounting, Karen was leading the specialty area for her firm.

Pete, an expert in international taxation, entered the field of taxation as US businesses began to globalize. Corporations that only operate in the United States do not need expertise in international taxation, but globalization brought a demand for international tax expertise and provided an opportunity for Pete. In 1965, Pete was working on the line in an hourly manufacturing job, perfecting his English and attending

community college in the evenings. Eight years later, he had created the international tax department for a corporation.

Hank seized the opportunity to develop expertise in a new area. He was completing his PhD just as the Tax Reform Act of 1986 was enacted. Hank saw this new act, which substantially changed the Internal Revenue Code, as an opportunity to become an expert. He purposely chose to specialize in the alternative minimum tax

“ In ‘86 when they passed the ‘86 tax act, I looked at AMT and said, here’s an area that is really brand new. They had an add-on minimum tax and the individual AMT, but they’re very different from the tax in ‘86. I said, ‘here’s something that I can really get my teeth into I can really digest and get to know well and become an expert.’ And nobody really had an advantage.

One of the problems that you have is coming out of school you have people who have a lot of experience with a lot of things and that experience helps them a lot in becoming an expert and having a leg up on you. But, here’s something that everybody’s at a level playing field. So I really got into the AMT... I wrote a book on it. A lot of my colleagues said, ‘Oh, this is complicated, they’re not going to keep this, they’re going to repeal it soon; therefore, I’m not going to worry about it.’ And even to this day, people are still saying, ‘They’re going to repeal it.’ It’s been the 25th anniversary of this AMT that, as that baseball player would say, AMT has been very, very good to me.”

Conversely, a change in the tax law can also be risky. One of the non-expert tax professionals indicated that very early in his career, he began to develop expertise in a

particular area of the tax code. However, that section was repealed along with the value of having expertise in that area.

***Summary of the macro environment.*** The macro environment can help or hinder a career. If the economy is weak, it may be difficult to find a job. A strong economy allows you more flexibility to find your first job—and to find a job that allows you to pursue your passion. You do not need to enter a tax specialty when it is new to develop expertise—five of the nine experts developed expertise in fields that were already well-defined. Yet, entering a new specialty can allow you to be recognized as an expert earlier in your career.

**Micro environment.** The micro environment is defined as an area that envelopes an individual, yet; unlike the macro environment, the individual has some (but not complete) control over the micro environment. In this research, I identified two major types of micro environments: education and the workplace. While individuals may not be accepted (or able to afford) the college of their choice, they do have some control over where they attend college, what they choose as a major, and whether they pursue graduate education. In the workplace, individuals also have some, but not complete control. They may not receive an offer employment from a firm or company. But, once they receive an offer, they can choose to accept or decline a job, they can ask for assignments, and they can look for work elsewhere as they progress through their careers.

***Education.*** Education occurs at various times throughout the years of developing expertise in taxation. I am restricting the definition of education to formalized, externally-structured programs including undergraduate and graduate college programs,

continuing professional education (CPE), and formal internal training programs.

Education specifically excludes unstructured self-study initiated by the professional to address a tax issue. Thus, if a professional reads a BNA portfolio as part of a graduate school assignment, that would be considered education. If, instead, the professional read the BNA portfolio to try to understand a client situation, that activity would not meet this definition of education.

Education is required to enter the field of tax accounting. At a minimum, a new professional must either have a law degree or have sufficient education to sit for the CPA exam. Currently, most states require 150 semester hours (essentially 5 years of college) to sit for the CPA exam; however, all of the professionals I interviewed entered the field prior to the 150 hour requirement. At that time, you could sit for the CPA exam after earning a four-year bachelor's degree in accounting.

All of the nine professionals I interviewed had graduate degrees in business, law or taxation. Four of these individuals earned their degrees prior to entering the field while the other five earned their graduate degrees in evening programs. The most senior participant entered the profession in the 1960s before graduate tax programs existed. Interestingly, he was instrumental in the creation of one of the first master of taxation programs in the country where he ultimately earned an MST—many years after he had developed expertise in taxation.

None of the experts I interviewed attended Ivy League universities and only one attended a college with a national reputation. The other professionals (with the exception of Josh) earned their degrees from universities with accounting programs recognized in

their region. Josh graduated from a liberal arts college with a very small accounting program. Josh had an additional hurdle for his entry into the profession since accounting firms were not familiar with his school and did not recruit at his college. If my research were focused on experts who create national tax policy, the educational backgrounds might have been quite different. However, to develop expertise in tax accounting, a good, solid education from a regionally, recognized accounting or law program appears to be adequate.

*Accounting or law school?* Since you can practice taxation in a CPA firm with either an accounting degree or a law degree, I was interested in whether law or accounting provided better preparation. In my first interview, Josh, who has an accounting background, mentioned that he had considered earning a law degree.

“I thought about going to law school a couple of times, but the last time actually was enrolled and decided you know I can do this...I don’t need to get a degree in this and go back to school. Although are so many times I think back it would be so nice to have that—that degree just to or maybe not the degree, but the way of thinking and writing that attorneys can do.”

While Josh has reconciled himself to not having a law degree, he seemed to have some sense that a law degree might have been helpful. Dave, who has a bachelor’s degree in accounting, a master’s in taxation, as well as a PhD in accounting, had a much different feeling about the importance of a law degree.

“I work a lot with lawyers, but the only thing that lawyers can do that we can’t do is actually finalize the draft. Some people say we can’t draft a document. I draft

documents all the time. The only difference is, particularly in the partnership area, when somebody has an issue: How to you allocate profits? What kind of things need to be in the agreement to have substantial economic effect? And I look at the agreement and say we need to modify this, this and this. And typically, what I do is I rewrite it, and I send it to the attorney, and I say that it is my suggestion that you change these six sections to read this way. And, then, they do it...[P]eople look at CPAs and think that all they can do is debits and credits. And then if you need some high level work done, you've got to find yourself a tax lawyer. And these are people who don't know what they're talking about. They've kind of been led to believe that tax lawyers do the high level stuff and CPAs put numbers in boxes. But that's not my experience, that's not what I do."

Hank, who also has both an undergraduate degree and PhD in accounting, had the following comments when asked whether a law degree would have been helpful to him, "No, unless you want to get into the estate and gift area or the state and local area, the law degree has some relevance. On the other hand if you don't have an accounting background, that law degree is actually almost a disadvantage for some people because they need to have especially that accounting background. Maybe the ideal today would be to go for an accounting undergrad and then a JD—a good way to go. But even then, the JD moves you away from the accounting knowledge and so much of a tax directors role today is—and I'm involved with tax directors every day, I run a couple of institutes where I deal with tax directors. So much more is uncertain tax position, FIN 48, FAS 109 that

kind of stuff is on their minds all the time. And a law degree doesn't really help you in that area."

None of the three attorneys I interviewed regretted having a law degree. The experts without law degrees generally felt that a law degree would not provide much if any of an advantage. For this group of experts, either a law degree and/or an accounting degree provided an acceptable educational foundation from which to develop expertise.

*Does a PhD convey an advantage?* Two of the experts had PhDs in accounting. Hank was able to earn his degree with a focus on taxation. By the time Dave began the PhD program, taxation was not available as a focus. When he decided to pursue a PhD in accounting so that he could enter academia, Dave mused,

"What I found that kind of surprised me, and I think it was kind of a change in era, for example if people like X and Y, those people were in the generation right in front of me in the PhD program. And back in those days, you could actually be in the PhD program, learn the tax law—or at least stay current. But when I went into a PhD program it was kind of the flipping point where it all became about econometrics and so where people are now..."

The difficulty now is if you are talking to somebody like that with four or five years of experience in a national accounting firm. Their assumption is if they went into a PhD program they might even learn more about the tax law... You are really going to struggle to stay current. In the four years you're in a PhD program, the whole world is going to pass you by... Whereas, I was fortunate that even though it was just sort of starting to change, even though I didn't really learn

anything about tax in the PhD program, they actually had me teaching graduate classes. And so, that was one way that I kept current...I think it's really a challenge today. If somebody wanted to go into tax education to understand the law, I always found that when I'd interview people for PhD positions, they didn't know anything about tax.”

Surprisingly, earning a PhD degree in accounting would probably impede rather than support the development of expertise in taxation.

*Masters' degrees.* Six of the experts I interviewed had some type of master's degree—either an MBA, a master in accounting, or a master of taxation degree. For Karen, her masters in accounting helped her get a job. She initially went back to graduate school because she graduated in a poor economy and was unable to find a job. Both Dave and Jennifer, who had undergraduate accounting degrees, earned their masters in taxation prior to joining the workforce. Dave's graduate training allowed him to identify technical tax issues. In addition, he was adept at tax research and writing tax memos. His ability to write and do research allowed him to work on complex tax issues rather than on more mundane compliance. The fact that Jennifer had a master's degree allowed her to skip compliance work and move directly into tax planning.

“...that was the first that they had the tax consulting and compliance split. They don't have it anymore. They kind of went away from that, but the first time they did that was when I was a staff 2 or a senior at [national CPA firm]. And if you had your master's, you were automatically consulting. If you didn't have a master's, you were automatically compliance.”

Josh earned his master's in taxation while he was already working in the field. When asked if his masters was helpful, Josh commented,

“I got it because it seems like you have to have an advanced degree. And, yeah, the firm paid for it so it didn't cost you anything. Many of the classes were not very good. There was a writing and research class that was pretty good. There was a corporate class that was pretty good, but then there were a lot of classes that started to feel with the Universities' program here, that everybody was on the same page of 'we're selling a degree, you're buying a degree as long as we give everybody a B, their firms will continue to pay for it and fund our program.' There were a large number of classes that were sort of mmm. Overall, it was worthwhile... I'm not sure how much credit I would give that program –it's hard to say though—without it...everything is interconnected. It was helpful.”

Josh hardly gave a ringing endorsement to his master's program, yet he also felt the program probably was useful. Pete echoed Josh's sentiments in terms of the role that the masters in taxation and his law degree played in developing expertise in his specialty, “It was my doing more than the classes, to be honest with you.”

All of the experts I interviewed had some type of graduate degree. For some of them, their graduate degree was instrumental in supporting the development of expertise.

***Continuing Professional Education (CPE) and internal firm training.*** The value of internal training or CPE depended on whether the professional was in the vanguard of developing expertise in a new field or if he/she was entering a well-developed field. Jennifer and Josh both entered established fields. Josh mentioned that a

turning point in his career was when he attended a tax academy presented by the national tax office of his firm. Josh also credited the very high-level CPE seminars he attended when he first joined the national tax office in his current firm as being important in developing his expertise in his specialty.

Jennifer noted that the annual internal training presented by her Big Four CPA firm was valuable. “[Big Four firm] was really big on training. There were a lot of accounting methods courses that were prerequisites to doing the rotations.” In addition, she mentioned that the annual training always included classes on writing and communication skills.

Professionals who were developing an expertise in entirely new areas of taxation had a different experience with CPE or internal training. For them, even though they were very early in their careers and were still developing expertise, they were *the experts* in comparison to other professionals. Therefore, they were gaining expertise from CPE by teaching others. For Karen, after a few years in the profession, she began presenting internal CPE programs.

“Because what happened—this was the time when [national CPA firm] did training and the teachers traveled. And so I went out. So, almost immediately, I became [national CPA firm’s] comp and benefits person and the person who had been in that role didn’t want to do that—he wanted to be a real estate guy. And so, I got to. I used to do an eight-hour course—ERISA for auditors.”

Frank and Pete, who are were in new specialty areas also mentioned teaching or speaking at professional conferences quite early in their careers.

**Summary on education.** Education allows experts to enter the field of taxation and provides the foundational knowledge they will need in accounting and taxation. Good quality graduate programs provide skills and training which can help catapult them to higher levels of expertise. In an established field, graduate programs, CPE and internal training programs can help them master what is known so that they are prepared to explore the cutting edge problems in their specialty.

**Workplace.** The experts I interviewed graduated from their undergraduate or graduate programs with a foundational knowledge in their discipline: they had an understanding of technical tax areas, they knew at least the basics of conducting tax research, and they were able to write reasonably well; but, they did not have technical tax expertise. They developed their expertise through their workplace experience. While technical tax expertise occurs in the workplace, not all workplaces support the development of expertise. This section will examine aspects of the workplace that helped or hindered the development of expertise including pressure of profitability, nature of the work, the nature of the firm, and support of mentors.

**The pressure of profitability.** As an applied discipline, taxation requires exposure to real-world problems to develop expertise; thus, most tax professionals develop their expertise in a business setting. However, since the objective of CPA firms is to make a profit through serving clients (or in corporate tax departments the purpose is to help corporations legally minimize their tax liabilities), the development of expertise is a by-product as opposed to the primary goal. Typically, staff-level tax accountants in CPA firms need to meet chargeability goals; the time they spend must be charged to client

work. The problem is that the amount of research and study that is required to develop expertise often cannot be directly charged to the client. The paradox is that without expertise, the firm cannot have long-term success, but the development of expertise may hurt short-term profitability.

None of the tax experts interviewed in this research study developed their expertise in an environment whose primary purpose was the development of expertise. For example, Frank's experience working in a tax department of a multinational corporation provided an extraordinary opportunity to spend his time researching and studying in a specific area of taxation. However, Frank's company was funding this department to address their business issues in a tax advantageous fashion. The fact that the individuals in this department were becoming national experts in this discipline was an unintended consequence or at least was not the primary goal.

Each of the tax experts had to balance study and research with the pressure of chargeability. Josh started out by increasing his efficiency at the routine, compliance work so that he had time to do more research.

Dave was able to overcome the profitability conundrum through his ability to write and research. Dave chose to earn an MST degree before beginning his career. His full-time MST program required that he write, research, and prepare presentations for his classes. When he began his career in taxation with a Big Eight firm, he was the first individual they hired with a master's degree.

“...what helped me is that since they had never hired anybody with a graduate tax degree before I think their expectation was that I had not learned anything in the

program that it was pretty much a waste of time and I just had a master's degree and other people had a bachelor's degree, and other than that it didn't really make any difference. And so, when they started handing out research assignments and I actually knew something about whatever the topic was. Plus, I had written lots of memos so I knew how to write a tax memo. I think they assumed that I was smarter than everybody else as opposed to having had some background that nobody else had. And so what happened was that I started to get all of the good work. Everybody else was doing nothing but preparation work and every time somebody had a memo to write, I got that work.”

Several individuals had the opportunity to join the national office of their large CPA firms. Tax professionals in the national office serve as internal consultants to the firm. They have the opportunity to address the more complex tax issues that are encountered in the field offices. While the national office still has chargeability expectations, they spend virtually all of their time on non-routine issues that require research. These individuals noted that, like Dave, they liked to do research and they wrote well.

One professional led a department with modified profitability expectations. As Karen was developing expertise in a new tax discipline, the lead tax partner asked to her to form a department that was focused on research and planning in this area. Her department was expected to breakeven rather than to generate the typical 35% margin.

“He was somebody who had a long view. He set expectations that as long as we broke even—that was fine. He was not expecting profitability. Profitability

would come from the firm in aggregate because we could get a client because we could answer a question. So he really had that natural national office concept that this is maybe a cost center, but it is a necessary cost center so that maybe the aggregate value can be delivered. So he protected me for a long time.”

Virtually everyone addressed the issue of chargeability as a hurdle to developing expertise. Frank, reflecting on the difficulty that his tax staff in a CPA firm encountered in developing expertise said,

“In this environment—in the kind of environment where we’re so concerned but it’s tough because you have chargeability requirement and you have to keep yourself chargeable no matter what you’re doing—there’s not a lot of luxury that people have in saying well, I’m going to become this person over the next one or two years.”

While universities can provide a theoretical background in taxation, developing expertise requires dealing with real-world problems by working with clients. And with few exceptions, that experience comes in firms that need to be profitable. Josh provided another perspective on developing expertise,

“... If you’re going to be an expert, here’s something that you can’t forget... You can’t forget that you’re here to make money serving clients. Being an expert in a bankrupt firm will get you nowhere.”

The tension between short-term profitability and long-term expertise affects both individual professionals and firms. The individual needs to balance short term chargeability expectations with their quest for developing expertise. The firm needs to

support the development of experts who can drive long-term success while managing short-term profitability to ensure there is a long-term.

***Nature of the work.*** Developing expertise in taxation requires working on actual client issues, and; the opportunity to work on these kinds of issues occurs most frequently on-the-job. As discussed in the section on profitability, the development of expertise is not the primary goal of CPA firms and corporate tax departments; instead, they are charged with addressing tax issues to generate a profit, comply with regulatory requirements, or minimize taxes. Sometimes the business goals support the development of expertise. For example, Frank's firm was engaged in litigation in a new area of taxation. Addressing these business issues required Frank's team to devote almost 100% of their efforts to addressing complex, new tax issues. However, often the bulk of the work in firms and corporate tax departments concerns routine compliance work where the instructions are SALY—same as last year. Josh expressed his dislike of compliance because you were not addressing new issues—the goal is to spend as little time as possible on compliance topics by being as efficient as possible. Therefore, you need real-world experience to develop expertise; however, you need the right kind of experience. Thus, years in practice does not necessarily translate into years of appropriate, expertise-generating experience.

***Compliance.*** As I was researching the expertise literature, I encountered Bereitter and Scardamalia's (1993) theory of progressive problem solving that suggests that expertise is developed by engaging in non-routine practice. Their contention was that continuing to do what you have always done does not lead to an increase in expertise.

Instead, the individuals need to engage in practice that pushes them beyond their current competence. Their concept of non-routine practice seemed consistent with what can happen in tax practice where the number of years in practice does not necessarily correspond with expertise-building experience. For example, if you do the same return for five consecutive years, after the first couple of years, you are unlikely to have any new experience—the work becomes routine. You are probably very efficient at completing the return, but it does not require that you grow and develop intellectually. My bias was that compliance work tends to be very routine, is unlikely to provide the new issues; and, thus, is unlikely to promote the building of expertise. Because of this bias, I bracketed my preconceptions. I was very careful in the interview process not to ask leading questions about compliance. I have continually gone back to the interview data to ensure that the comments about compliance were, in fact, being expressed by the experts.

Work in the tax departments of CPA firms or in the corporate tax departments can be divided into tax compliance and tax planning. Tax compliance involves meeting the regulatory requirements of tax authorities such as preparing forms to determine the tax liability. Tax planning involves helping clients deal with defined tax issues (i.e. an issue raised in an IRS audit) or in helping a client meet their business goals in a tax efficient manner. By its nature, tax compliance tends to be more routine; whereas, tax planning tends to be non-routine. None of the experts currently spend any significant time on compliance. Instead, they spend their time working in tax planning or tax policy.

Some of the experts started their careers working in compliance. Art began his career doing compliance as did Hank. But, interestingly, many of the experts spent very little if any time focusing on compliance. Frank began his career working in a tax department in a non-compliance role; he was focusing on major tax litigation. Jennifer began her career in accounting on the audit staff, then switched to taxation.

“I was probably in audit for about a year and a half until I switched to tax once there was an opening... that was the first that they had the tax consulting and compliance split.... and if you had your masters, you were automatically consulting. If you didn't have a master's, you were automatically compliance.”

Jennifer is deemed to have expertise in her tax specialty area; however, she states,

“I never had the compliance. I helped out and I reviewed, but I never really was part of the whole compliance process and it wasn't part of my comfort zone. And so I wasn't comfortable saying I want to be a senior manager or a partner when I'm not actually that great at the compliance part of it. I would rather advise on the consulting and the planning because that's my comfort zone, that's what I'm good at. And that's what I decided to stay with.”

Dave also spent very little time in compliance. While he was hired to work in compliance, he quickly moved into research. Dave began his career after completing his master's degree in taxation, which at the time was very uncommon. In fact, his office had never hired anyone with a master's degree in taxation. As a result of his graduate study, Dave had a strong background in technical tax, he knew how to research tax issues, and he could write a tax memo. Thus, when given a research project, Dave could

identify the issues, conduct the research, and write the tax memo. One successful project led to additional research assignments.

“I think early in my career what benefitted me more than anything[was] that I got the work that gave me the opportunity to think and to learn as opposed to just—I don’t want to make it sound derogatory, but putting numbers in boxes which is literally what we did back then and send it all to Fast Tax. So, I think I developed a lot faster than some of the other people. And then, that sort of accelerates.

People figure out that you can do that kind of work, you get more and more of it.”

Sara began her career in a non-tax area of accounting and moved into taxation when she went to work for the IRS. Following her stint at the IRS she joined a Big Eight CPA firm. At the CPA firm she spent her first several years working with a client on a large IRS audit. Once she completed the audit, she joined the national tax office. At both the IRS and her CPA firm, Sara was involved with compliance from the standpoint of dealing with controversy—issues between the IRS and the taxpayer. In other words, she developed her expertise while engaging in very little of the traditional compliance work such as preparing annual tax returns.

Pete was involved with some compliance issues while he was overseeing the tax department in large corporations. When asked for his opinion on the compliance side of taxation, he stated,

“I have a lot of respect for compliance. Because through compliance, you can really find a lot of tax planning ideas that you can implement. If you don’t know the compliance you’re really going to be missing a key part of what need to do

from the tax point of view. Because to me, compliance is really key to everything. You've got to know where all of your ideas are going to end up—where are they going to show up for the IRS. And you had to know the company; you have to know the compliance numbers. Otherwise, you don't know the company. So I got very involved with compliance, I was doing a lot of that....From compliance; I went into planning—because that's what we did.”

He also noted that many tax compliance professionals do not move into tax planning.

“They don't take the next step. Because compliance is so comfortable, once you get into a groove and they do that.”

Pete felt that compliance work was very important. However, compliance was valuable because it helps you fully understand the company and provides a platform for tax planning.

When asked about compliance, Frank had a strong opinion about the future of compliance work.

“And if you're doing compliance, then you're just toast in my opinion. Because I think compliance will be phased out in the next four or five years. You're not going to be having people inputting tax returns in the future—that will just be an automated process. It will be the same thing we saw in Detroit. It went from people to robots. People are supervising robots in the construction of an automobile and that tax return is much easier to automate. You've seen it with the outsourcing side.”

So where does that leave us in developing tax expertise? Everyone developed expertise through working on client issues either in CPA firms or in corporate tax departments. The three college professors initially developed their expertise prior to entering academia. While in academia, they continued to maintain links to real-world tax issues through consulting with clients, participating on professional committees (e.g. the AICPA or the ABA), and speaking at professional conferences. However, traditional compliance work—completing annual returns—was not the area where they developed their expertise. As Pete indicated, compliance can help professionals understand the business and the tax issues, but compliance by itself does not lead to breaking new territory in taxation.

It is possible that fifty years ago, compliance, research and planning were more integrated. For example, Art remembered his first corporate return after he left audit to join the tax staff,

“One of the funniest things is that the first thing I did when I was in that tax department was I prepared a corporate tax return. I took it into my supervisor—in about two hours he comes out and he says, ‘That was a perfect preparation job. Can you tell me what the company does?’ My mouth fell open and I said, ‘Duh.’ And he said, ‘Well, don’t you think it would be a good idea for you to find out?’ And I did. And I learned a lesson, whenever I got a new client, I’d go out to the client. If it was a manufacturing client, I want to go out and walk around the plant. If it was a service organization, I’d want to talk about what they did. And I’d talk to them about how they structure it because there are some interesting

things that you can do with structure. But that was one of the first things that I learned.”

Art was engaged in compliance work, but from his first return, accurately completing the return was not the only objective. Even when completing the return, he was expected to go beyond compliance.

Unlike some of the experts who were recognized for expertise fairly early in their careers, Art’s expertise did not develop overnight. Art indicated, “...the tax part of it, it just seemed to come naturally to me, but it evolved little by little.” Art does not have a single area of tax specialty; instead, he has a very, broad expertise in taxation. Perhaps this type of expertise can only occur when compliance and planning work are interwoven over many, many years.

*The nature of the firm.* Experts can develop expertise working on real-world tax issues in CPA firms, corporate tax departments, or the governmental agencies (e.g. the Internal Revenue Service). However, workplaces do not provide an equal opportunity for gaining experience. Josh encountered that issue on his first job. Josh was fortunate that the firm did have some partnership work that allowed him to delve into partnership taxation issues. However, that firm could not provide him the opportunity to develop expertise in corporate mergers and acquisitions because they did not engage in that type of work. Josh mused,

“You know, it’s not that people in small firms aren’t intelligent, it’s that they don’t have the opportunity to do things. Now maybe some of them even if given the opportunity would not be able to do that and that’s why they are in a small

firm, but just the reality is if you don't have clients with complex issues, then why would you ever develop expertise? The consolidated return area is one that would be my biggest weakness in the corporate content—why is that? Because we don't have a lot of big consolidated groups of clients...”

If expertise develops by working on real-world issues for clients, then the nature of the clients, the sophistication and complexity of their tax issues will determine the quality of the experience a tax professional receives. An individual, who works for a firm that only handles relatively simple individual returns, will have a very limited opportunity to develop expertise. The tax issues for their clients will be simple and straightforward; and, simple straightforward work does not lend itself to dealing with complex tax issues that require research.

*National office.* Larger CPA firms have national offices. The national office serves as the center of expertise for the tax practice. Tax professionals who work in the national offices spend their time addressing more complex client issues that are referred to them through operating offices across the United States. Thus, professionals completing a rotation in national tax will spend a high percentage of their time conducting tax research to address client issues.

Seven of the nine experts had been involved in national tax office for their CPA firms. Six of them joined national tax in leadership positions after they had gained expertise. One individual, who entered a new area of taxation, built her expertise and national tax practice simultaneously. Two of the tax experts did develop much of their expertise by working as tax staff for a Big Four (or Big Eight) CPA firm. However, only

a very small number of tax staff has the opportunity to have a rotation in their national office. Thus, while large CPA firms do have clients with complex tax issues that are important in developing expertise, employment in the tax department of a Big Four CPA firm does not guarantee work geared to developing expertise.

***Support of a mentor.*** Many experts noted that specific individuals (including professors, their bosses or other experienced professionals) helped them develop expertise. I have used the term *mentor* to describe the type of support provided by the more experienced professionals rather than referring merely to officially designated mentors. In fact, none of the experts I interviewed had participated in an organized mentor program and one expert noted, “These firms that assign a mentor to somebody—that never works. You kind of have to pick your own mentor.”

The first mentor for many of the experts was a college professor. Professors often played pivotal roles in choosing taxation as a career. Hank was an accounting major. “Then, in college, I had an inspirational tax professor that helped direct me to tax and that helped develop my love for tax.” Later, Hank had a graduate school professor who recommended him for a consulting opportunity.

For another expert, an adjunct professor helped him find his first job in his tax specialty area. Pete was working full-time while pursuing his undergraduate business degree. An adjunct professor referred Pete to a position in large corporate tax department.

“...I got very friendly with the tax professor and he taught at the master’s level  
... We started talking and he said, Pete, would you like to get a new job—a job

that would be closer to downtown? A job that would really enable you to start dabbling in international tax. And I said, ‘My god, that would be phenomenal.’ So in 1972, he actually recommended me to [ABC Company] because they were the auditors for them.”

Even after graduating from college, a professor can serve in the role of a mentor. Karen was leaving her position in a Big Eight CPA firm to move to a smaller community. “You know it worked out really well in that I knew Professor X. He was one of my professors at the U. And he facilitated getting a job at [national CPA firm].”

College professors are particularly useful in helping individuals decide to specialize in taxation or to assist them in finding employment after graduation. Mentors in the workplace were extremely important in developing technical-tax expertise. Almost every expert spoke of individuals who made a difference in their careers.

Dave had two individuals who influenced his career. The first individual was the head tax partner in his office of the Big Eight firm. “...[H]e never really was my mentor. He was an incredibly smart guy, but I never really felt that I wanted to be him. And I think that is kind of important.” However, even if Dave did not consider him a mentor per se, Dave did have the opportunity to work with this senior tax professional on some very complex tax issues. Dave successfully completed some smaller projects, and then had the opportunity to work on smaller pieces for very prominent clients.

Dave began working with his second mentor when he moved to [city Y]. Looking back on his career, Dave says, “90% of what I know, I learned from George.”

“So when I got out to city Y, there was a guy who headed up their tax department... When he worked there, he worked on some of the biggest real estate clients that they had in the country. And he was probably one of the best known partnership/real estate guys that the firm had... I sort of became his sounding board for things. Because he was incredibly good technical guy who then took over the City Z office. They moved him over from City W to City Z when it had three people in the tax department and within a year, it had 25. But he was also in charge of all of the administrative things for a 25-person department. So it was very difficult for him to keep current with the law.

And so, after working with him on a couple of engagements, he decided that I was pretty good at remembering things and I was sort of in that learning mode. So I would read things and whatever new law had come out—whatever cases had come out. So he would call me into his office and tell me what he wanted to do. He’d describe a fact pattern—then he’d want me to take this and see if you find and holes in this idea. And his ideas usually had three or four steps to them. It wasn’t just—we’re going to do this. It was always we’re going to do this, and then we’re going to do that and then the next thing. And everything built on one another. And so when you tried to find the hole in it, it was kind of an electrician trying to find a short. You had to slowly pull things apart. And once you did that, you thought, ‘Oh, crap, I thought I had this figured out, but I don’t.’ So he would allow me to do that. I think the unique thing that happened to me in

City Z is that George was willing to let me do things without regard to how much time I spent.”

Other experts did not have quite the strong mentoring relationship that Dave had; however, virtually everyone had individuals over the years that provided support for their professional development. It appears that the mentor/mentee relationship is not purely altruistic and involves a certain degree of quid pro quo. Mentors seem to be willing to make an investment of time and energy into individuals who can do good work. For example, Dave proved himself capable of conducting research and writing before he received additional opportunities from his mentors. Karen noted that one of her early bosses, who was instrumental in the leadership opportunity she was given in her specialty area, did so because she could do the work.

“He was very mercenary. It was here’s a pool of talent—‘Let’s use it.’ I don’t think it was just because he liked me. I think it was he recognized that this was a skill set that could be used.”

In the workplace, the boss, or leadership of the department is often the gatekeeper to the interesting work that can promote the development of expertise. A number of experts expressed the sentiment that “success leads to success.” If you are able to demonstrate that you can do *good work*, more *good work* is likely to come your way.

***Summary of the workplace.*** While tax accountants develop expertise in the workplace, the workplace is not dedicated to developing expertise. First, most tax accounting experts work in CPA firms or corporate tax departments that are oriented towards profitability—either by generating fees from tax work in a CPA firm or through

legally minimizing the tax burden in the corporate tax department. Thus, day-to-day work may be straight-forward compliance work which is not the type of work that leads to opportunities to do tax research to answer real-world tax issues.

Next, the nature of the firm or corporation where you work determines the type and quality of experience available. Josh's experience of working for a very small CPA firm that did not have many clients with complex tax issues made it more difficult (but not impossible) for him to obtain appropriate expertise-building experience. In contrast, since Jennifer secured a rotator position in the national tax office of a Big Four firm, she was immersed in complex, client issues that enabled her to build expertise.

Art's experience may also hint that the structure of tax departments has changed over past five decades because of the increasing complexity of tax. For example, when Art entered the profession in the 1960s, ERISA had not been enacted, state and local taxation did not play a very significant role in many tax departments, and few businesses had international tax issues. The complexity of today's tax system may force tax professionals who are developing expertise to focus on a single area of expertise.

While tax experts develop expertise in the workplace, the workplace is not dedicated to developing expertise. Still, the workplace provides both venue to work on real-world client issues and the experienced professionals who can guide nascent tax experts.

**Luck.** At some point in every interview, the tax expert would talk about being "lucky" or "fortunate", that their experience was "serendipitous" or it was "kismet." Luck perhaps played a role in their professional lives in that their journey to expertise

was not necessarily planned in advance; however, they were not tapped by a magic wand that instantaneously transformed them into an expert. Instead, their luck, good fortune or kismet presented itself as an opportunity; and, the opportunity only resulted in expertise if they were both capable and willing to take advantage of the opportunity.

In addition, the opportunity did not necessarily announce itself as such. It might have been a somewhat random job assignment or it might have been an obstacle they had to overcome. Often, the opportunity was only recognized with hindsight. At the time, they were just doing their jobs. Opportunity presented itself in many different forms. Sometimes the opportunity just happened. However, some experts had to actively hunt for or create opportunities. One expert took the risk of turning down one opportunity immediately out of his undergraduate program because he believed he would have better opportunities after earning a master's degree. However, once the opportunity occurred, the experts had to have the desire and the capability to do the job well. In other words, when presented with the opportunity, they needed to be able to do the work. Then, as one expert said, "success leads to success."

***The perfect environment.*** Frank may have presented the most spectacular example of walking into a professional environment that provided an exceptional opportunity to develop expertise. According to Frank, "I was just very fortunate being in the right place at the right time." In his first full-time professional job, his work consisted of reading, researching and writing within a group of professionals that was creating a new specialty area in taxation. While Frank was *lucky* to have landed at the right firm and the right time, he had the skills to meet the challenge. He was trained in legal

research so that he was capable of conducting the research and writing the legal briefs, and, he was willing to work hard and liked to “figure things out.” He was lucky to get the first job, but he became an expert because he was able to capitalize on the opportunity.

***Creating opportunity out of thin air.*** Josh had a difficult time finding his first job, and; ultimately, he was hired by a small, local firm. In this firm, the tax staff accountants were primarily engaged in routine compliance work—not an environment noted for facilitating the development of expertise. Yet, when Josh looks back on the experience of working for this small firm, he says “[i]n some ways I was lucky—it sure didn’t feel like it at the time...but what it allowed me to do was really focus on tax.” Through his intelligence, drive, and perseverance, Josh was able to create an opportunity. Later, Josh’s invitation to participate in an in-house tax academy afforded an opportunity to open the door for developing expertise in his tax specialty area.

***Saying “no” to find a better opportunity.*** Dave was offered a job with a Big Eight CPA firm before graduating from his undergraduate program. Instead of accepting that job, he decided to enroll in a graduate tax program directly out of undergraduate. After declining the job offer, Dave said,

“... I remember walking downstairs, sitting in my car, ready to go back to school thinking that’s probably the stupidest thing I ever did turning down that job because this guy’s got a lot of experience and he’s telling me you’re going to pay somebody to learn from a book; whereas, I’ll teach you on the job.”

Dave took a risk, but earning a MST degree before starting his professional career provided the opportunities to develop his expertise once he joined the tax department of a Big Eight firm in City W. Rather than spend two or three years on the audit staff, he was able to go directly to the tax department. Because he was able to do the research and writing he created further opportunities to do research and writing. Dave spent little time in the routine compliance work; instead, he was able to delve into tax issues, to explore new areas and develop expertise.

*Go back to school to find the perfect opportunity.* Karen graduated from undergraduate with a degree in economics,

“but it was 1973 and the economy was in the tank and I couldn’t get a job. I had very good grades, but I couldn’t get a job. And so I’m like, Karen, don’t be an idiot, go get a master’s degree in accounting. And so I did. And when I finished it was 1975 and a completely different work experience. Every place I interviewed offered me a job.”

Karen joined a big eight CPA firm that

“had a specific skills development program. And so everyone who came in the door was given two technical specialties and two industry specialties. It wasn’t based on any aptitude you had demonstrated or any interest you had demonstrated. It was entirely based on their needs—and maybe if you interviewed with somebody who liked you and wanted you on their team. Otherwise it was pretty much random.”

One of the specialty areas to which she was assigned, a new area of taxation in which the law had just been passed but was not yet effective. She had the opportunity to get in on the ground floor. In addition, this particular specialty was a perfect match for her skills and interests because it required an ability to handle complex quantitative tax issues and it required someone who could deal effectively with the needs of people.

“Just because of the unique the random effect of my getting those four specialties. And my peculiar character traits worked together towards building expertise really fast—so that I got that opportunity.”

Once again, Karen was given an opportunity, but she was able capitalize on this opportunity because her skills and abilities matched the need of the discipline. She was fascinated by the area—she loved the complexity. A year after she joined the team, a new opportunity arose. The team leader left the firm and she was offered the opportunity to lead the team. Once again, opportunity arose, but it was not just luck that led to the opportunity. She was given the opportunity because she had shown she was capable and when asked whether she wanted the responsibility she said “yes.”

*Actively looking for an opportunity.* Hank was completing his PhD shortly before the 1986 tax act resulted in major changes to the Internal Revenue Code.

“In 86 when they passed the ‘86 tax act, I looked at AMT and said, here’s an area that is really brand new. They had an add-on minimum tax and the individual AMT, but they’re very different from the tax in in ‘86. I said, here’s something that I can really get my teeth into I can really digest and get to know well and become an expert. And nobody really had an advantage.

One of the problems that you have is coming out of school you have people who have a lot of experience with a lot of things and that experience helps them a lot in becoming an expert and having a leg up on you. But, here's something that everybody's at a level playing field. So I really got into the AMT...I wrote a book on it."

***Summary on luck.*** *Luck* represents opportunity. Without some type of opportunity, potential expertise may languish. Opportunity generally presents itself through workplace assignments which may be influenced by macro environmental influences such as a change in the tax law. Sometimes opportunity just occurs, but some experts created their own opportunities. Regardless of how opportunity presents itself, it only results in expertise if the individual has the necessary personal traits and skills to take advantage of the opportunity.

## **Conclusion**

This chapter discussed the data collected from interviews with nine technical-tax experts and three tax professionals who were not technical-tax experts. Each story was unique—no one had the same journey to expertise; however, while the individual stories varied, the underlying factors influencing the development of expertise were the same. Throughout the analysis, I continually referenced the interview data by using the words of the interview subjects. Using the GTM constant comparative process, I identified the core concept that describes the development of expertise in tax accounting: Conducting research to address real-world tax issues. Then, I identified the following four categories:

personal attributes, the macro-environment, the micro-environment, and luck which further define and clarify the core concept. Next, the properties of the categories

Table 5:

*Summary of Core Concept, Categories, and Properties of Categories*

Core Concept: Conducting research to answer real-world tax issues	
<u>Categories</u>	<u>Properties of the Categories</u>
- Personal Attributes	- Intelligence matched to the discipline. Willingness to work hard. Fascination with taxation. Tolerance of ambiguity.
Macro Environment	Economic climate. United States tax law.
Micro Environment	Education Formal education CPE and corporate training  Workplace Pressure of profitability. Nature of work: compliance versus planning  Support of a mentor
Luck	Capitalizing on an opportunity. Creating an opportunity.

were presented to explain the nature of the categories. Table 5 provides a summary of the core concept, the categories and the properties of the categories.

A grounded theory methodology study requires that a theory is advanced. In this chapter, the components of the theory have been discussed, but the theory has not been developed. In the next chapter, the core concept, the categories and the properties of the categories will be used to develop a theory for how professionals develop expertise in tax accounting.

### **Chapter 5 Grounded Theory, Analysis, and Conclusion**

The purpose of this study was to determine how professionals developed expertise in taxation. My interest in this area was piqued after many years of observing tax accountants in a national CPA firm. While I was not surprised that novice tax professionals did not have expertise—I expected that the development of tax expertise required real-world experience, I was surprised that so few tax professionals seemed to achieve expertise in taxation despite many years of practice. What was different about those who achieved expertise from those who did not? Thus, I undertook a grounded theory method (GTM) study to analyze how professionals became experts in taxation.

In a GTM study, the researcher collects data and engages in constant comparative analysis until the core concept is identified. In the preceding chapter, I identified the core concept as *conducting research to answer real-world tax issues*. I continued to code, memo, and compare codes until I identified the categories and properties of the categories (variables) that described the core concept. These variables were grouped into three categories: personal attributes, micro environment, and macro environment based on whether the variable was generated at the individual, the entity or the societal level. The variables that reside within the individual (e.g. intelligence matched to discipline) were

included in personal attributes. Variables that arise within institutions of society (e.g. education and the workplace) were included in the micro environment. Variables that are outside of the direct control of entities (e.g. the economy and U.S. tax laws) were included in the macro environment. I also identified a fourth category, *luck*, which reflected opportunity—the somewhat random events that influence the development of expertise. By identifying the core concept and the variables, I described the phenomenon, but I had not yet built a theory; and, the end result of a GTM study is the production of a theory.

According to Dubin (1978),

“A theoretical model starts with things or variables, or (1) units whose interaction constitute the subject matter of attention. The model then specifies the manner in which these units interact with each other or (2) the laws of interaction among the units of the model. Since theoretical models are generally limited portion of the world, the limits of (3) boundaries must be set forth within which the theory is expected to hold. Most theoretical models are presumed to represent a complex portion of the real world, part of whose complexity is revealed by the fact that there are various (4) system states in each of which the units interact differently with each other. Once these four basic features of a theoretical model are set forth, the theorist is in a position to derive conclusions that represent logical and true deduction about the model in operation, or (5) propositions of the model.”  
(pp. 8-9).

In the preceding chapter, I completed the first step by identifying the properties of the categories (i.e. the variables ). In this next section, I will build a theory by describing the interaction of the variables, setting the boundaries for the theory, and explaining the different system states in which these variables. I will begin the process of building theory by discussing existing theory.

### **Existing Theory**

**Dreyfus and Dreyfus model of expertise.** Early in my research, I encountered the Dreyfus and Dreyfus model of expertise (1986). This model postulates that expertise is a function of time and experience. A new professional enters the field as a novice and with some experience becomes an advanced beginner, competent, proficient and ultimately an expert. The Dreyfus and Dreyfus skill model,

“represents a *progression* in the sense that a typical learner’s *best* performance in a particular type of situation will initially stem from the novice rule-following, then from the advanced beginner’s use of aspect, and so on through the five states. If the performer is talented, ultimately the best performance will result from the intuitive use of similarity and experience, and he will perform as an expert”

(Dreyfus and Dreyfus, 1986, p. 35).

First, this model reflects cognitive psychology research that established that expertise was a learned rather than innate (see Table 1 Chronology of Representative Expertise Research). Then, this model suggests that acquiring expertise is sequential—an individual cannot move directly from novice to expert. In addition, the model posits that time and experience do not guarantee the development of expertise—a performer must be

*talented* to achieve expert performance. Thus, this model supports my observation that time and experience are necessary for developing expertise, but that not everyone who acquires experience will attain expertise. This model hints at the concept of the experienced non-expert—someone with years of experience who fails to achieve expertise. Bereitter and Scardamalia (1993) further expand on the Dreyfus and Dreyfus skill development model and the concept of the experienced non-expert with their theory of progressive problem solving.

**Progressive problem solving/deliberate practice.** In 1993, Ericsson, K., Krampe, R., & Tesch-Romer, published a study on deliberate practice and Bereitter and Scardamalia (1993) published a book describing progressive problem solving. The studies of deliberate practice were conducted in music and athletics—areas in which expertise is gained through practice (e.g. playing scales on the piano or working on your ground strokes in tennis)—while progressive problem solving applies to areas in which individuals learn by addressing problems (e.g. solving successively more difficult math problems or addressing increasingly more complex client issues). Both of these theories suggest that skill building—and particularly the skill-building necessary to attain expertise—occurs not just based on hours of practice (although hours of practice/problem solving are required), but on the quality of the practice or problem solving. For example, musicians fail to progress if they continue to practice a simple piece after they have mastered the technique just as professionals fail to advance if they repeatedly address the same problems. In effect, deliberate practice and progressive problem solving are different terms for very similar processes. In this study, I will use progressive problem

solving rather than deliberate practice since problem solving better reflects the manner in which tax professionals gain experience.

**Combining the Dreyfus & Dreyfus model with progressive problem solving.**

I combined the Dreyfus & Dreyfus model with the theory of progressive problem solving to create a more robust model for describing the development of expertise. As shown in Figure 2 below, the vertical axis reflects *learning* that leads to the progression through the five skill levels specified in the Dreyfus and Dreyfus model. The horizontal axis indicates the passage of time. Thus, the new professional would begin as a novice and as he/she engages in appropriate learning activities will, over time, progress to advanced beginner, competent, and proficient. I added the bold horizontal line between proficient and expert to represent a barrier to reaching expertise. Advancement above proficiency requires more than simply time and experience.

I have illustrated Bereitter and Scardamalia's concept of progressive problem solving and routinization using the red and blue curves. The blue curve, *Develop Routines*, shows a non-expert learning path. At first, the individual on the non-expert path will learn based on new experiences. However, with time, the non-expert learner will focus on developing routine solutions for typically encountered problems rather than seeking new more complex problems. As reliance on routine solutions increase, the opportunity to learn from experience diminishes. This experienced non-expert may become proficient, but will not be able to cross the threshold to expertise.

The red curve, *Progressive Problem Solving*, depicts the learning path when a professional engages in progressive problem solving—once simple problems are

**Figure 2. Dreyfus & Dreyfus Model Combined with Progressive Problem Solving**

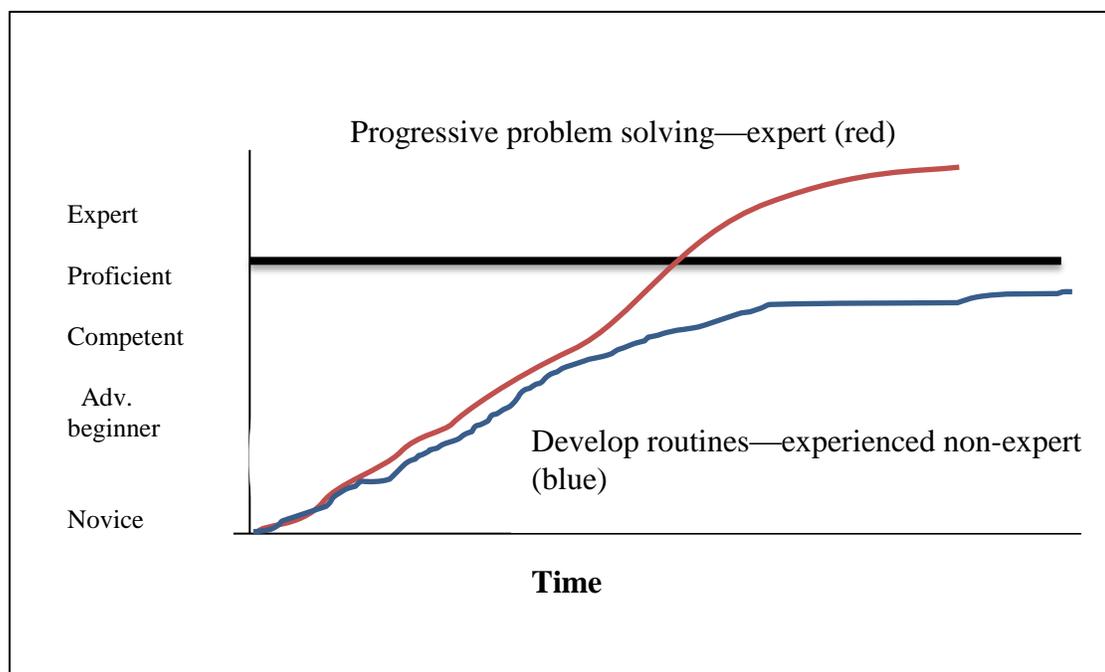


Figure 2. Dreyfus & Dreyfus model combined with concept of progressive problem solving. This figure depicts the learning curve for experts (progressive problem solving) and non-experts (develop routines). Horizontal line represents barrier to attaining expertise.

mastered more complex problems are addressed. Initially, the level of skill development between those on the progressive problem solving and develop routines curves may appear to be quite similar. However, while the develop routines path flattens as the professional reaches proficiency, the individual on the progressive problem solving curve continues to learn and; therefore, is able to cross the barrier from proficiency to expertise.

### **A Model of the Mechanics of Progressive Problem Solving**

In combining the Dreyfus & Dreyfus model of skill development with the Bereitter and Scardamalia concept of progressive problem solving, I arrived at a more robust explanation of the dynamics of developing expertise. However, this combined

model reflects the outcome rather than the mechanics of progressive problem solving. In Figure 3, I represent the process of progressive problem solving at a greater level of detail. Rather than a smooth curve, I suggest that progressive problem solving consists of a series of discrete incidents. Each problem solving event (shown as an arrow) offers an opportunity to learn and advance on the skill continuum. Solving more complex problems results in greater increases in knowledge (depicted in Figure 3 as a move up the vertical axis). In an environment focused solely on developing expertise, the problem solving events would be continuous—as soon as one problem is solved, a more complex problem would be introduced. However, in a typical CPA firm, which is focused on meeting client needs rather than developing technical tax expertise, progressive problem solving opportunities would be interspersed among periods requiring routine work.

Bereitter and Scardamaila (1993) suggest that expertise is developed by continually addressing more and more complex problems—that each problem solving event would cause the individual to gradually progress from novice to advanced beginner, etc. Understanding how expertise is developed requires recognizing both the dynamics of each progressive problem solving event *and* the linkage between these progressive problem solving events. In this study, I was exploring how professionals developed expertise in tax accounting. In order to fully understand the theory's application to the tax field; I must also describe the nature of progressive problem solving for tax professionals.

### Theory 1: Conducting Tax Research = Progressive Problem Solving

I propose that *conducting research to answer real-world tax issues* constitutes progressive problem solving for developing expertise in taxation. Conducting tax research provides the type of learning events that are required to advance towards

**Figure 3. Progressive Problem Solving--Discrete Learning Events**

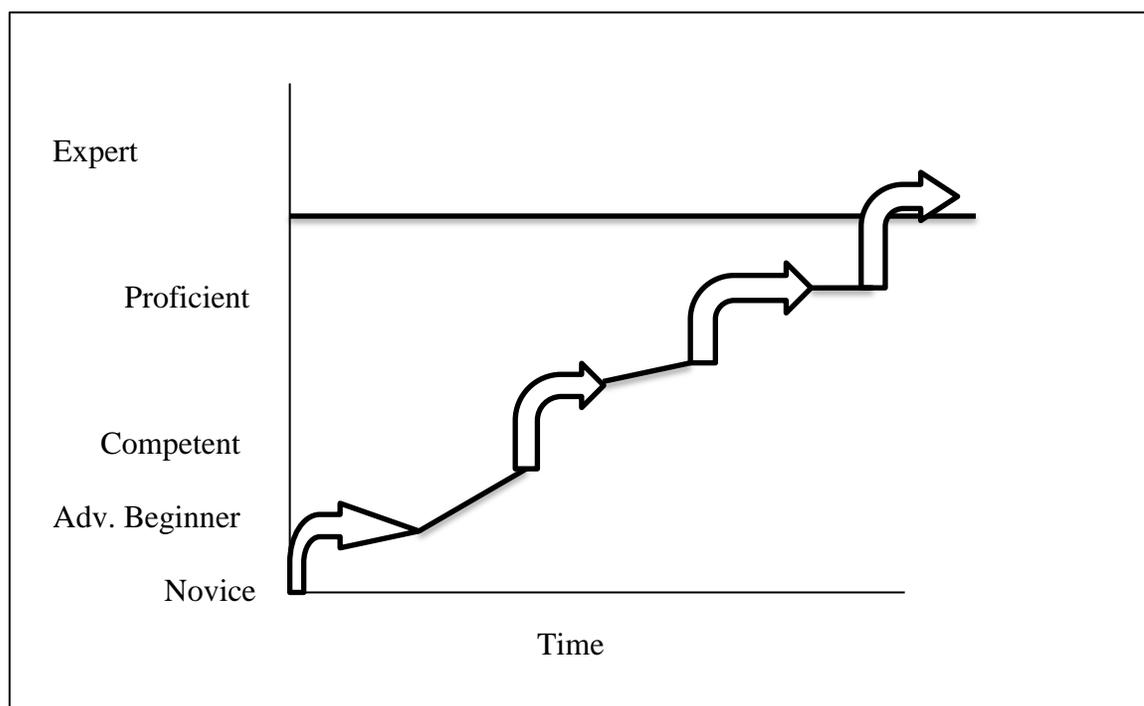


Figure 3. Progressive problem solving—Discrete Learning Events. This figure illustrates that progressive problem solving consists of a series of discrete learning events (arrows) linked by routine problems (lines).

expertise in taxation. In the workplace, tax professionals may be assigned a specific issue to research or they may discover a tax issue on their own; but, regardless of the impetus, finding the answer to the question requires research—and a successful research project results in an increase in knowledge. In progressive problem solving, the next time the professional encounters a similar issue; he/she will not need to engage in the same

level of tax research to answer that question, but may be able to identify a new, more difficult question to research. Thus, the increase in knowledge from conducting tax research will allow the professional to identify and address more complex problems in the future. As tax professionals research increasingly complex tax issues, their level of skill advances.

*Theory 1: Professionals learn to be experts (progressing on the skill continuum from novice to expert) by engaging in progressive problem solving. For tax professionals, progressive problem solving occurs from conducting research to address real-work tax issues.*

### **Theory 2: Conducting Tax Research Leads to an Increase on the Skill Continuum**

Vroom (1964) used the following formula:

*Performance* =  $f(\text{ability} \times \text{motivation})$  to suggest that performance is a function of both ability and motivation. In Figure 4 below, I have adapted the Vroom formula to explain how conducting tax research leads to an increase in skill in taxation. My formula: *Increase on skill continuum* =  $f(\text{knowledge} \times \text{effort})$ , is inserted into the model for conducting tax research (Figure 4). To be successful, the tax professional needs to satisfy both the knowledge and the effort components—knowledge without effort encourages routine solutions while effort without the requisite knowledge leads to failure and frustration.

In this model, I suggest that a problem which requires tax research is presented; then, the professional combines knowledge and effort to address this issue. If the professional is successful, a problem is solved for the client and the professional has

progressed on the skill continuum (i.e. he/she has gained knowledge). The concepts of *knowledge* and *effort* are loosely related to Vroom's *ability* and *motivation*; however, in this model knowledge and effort are defined by factors which specifically impact the development of tax expertise and are based on the categories and variables discussed in the previous chapter. Thus, to understand this proposed model, a definitional delineation

**Figure 4. Conducting research to answer real-world tax issues**

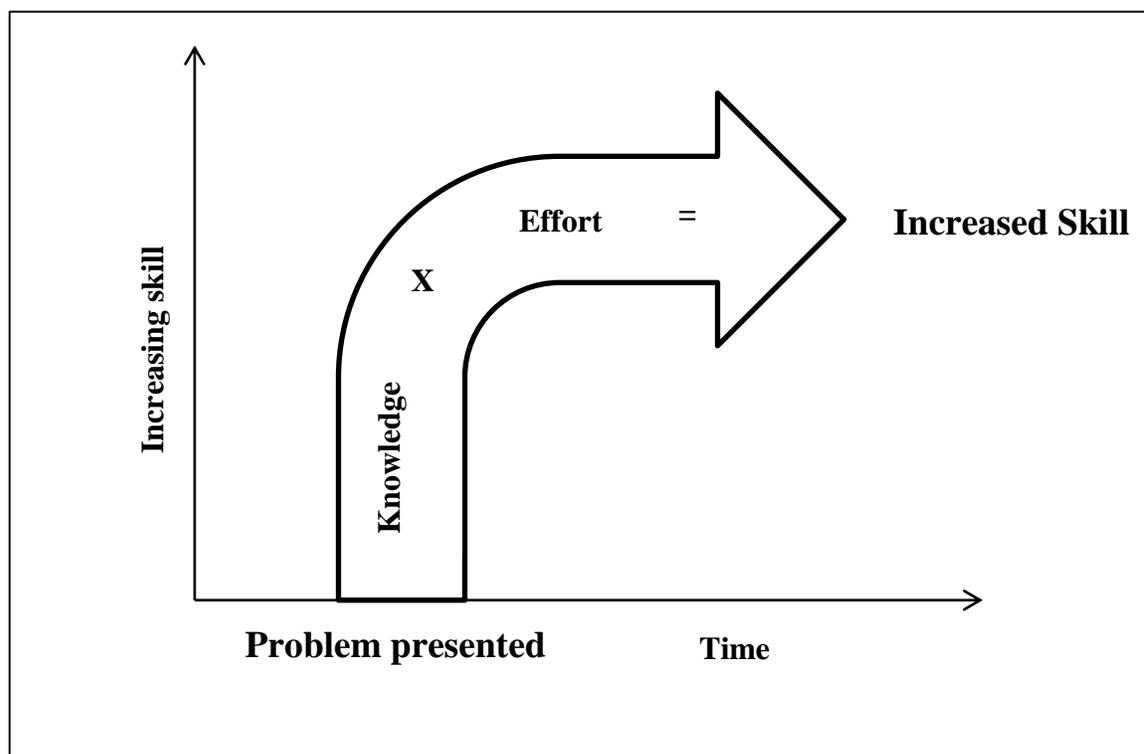


Figure 4. Conducting research to answer real-world tax issues. This figure illustrates that for each successful progressive problem solving incident, *Increase on skill continuum = f(knowledge x effort)*.

must be made between the terms knowledge and effort. In the process of defining these terms, the concepts will be linked to the variables (properties of categories) identified in the preceding chapter.

**Knowledge.** Knowledge in the context of this model of tax expertise includes understanding the relevant technical tax issues as well as knowing how to perform tax research. Technical tax knowledge includes a general knowledge of taxation (e.g. tax policy and the basic structure of the United States tax system) and specific knowledge of a tax specialty (e.g. partnership taxation). In addition, tax knowledge needs to be directly related to the tax issue under investigation. For example, knowledge of estate and gift taxation is not particularly helpful in dealing with an issue in accounting methods. Further, the level of preexisting knowledge needs to be appropriate to the presenting tax issue. A novice professional would not be able to address an expert-level question. Consequently, the presenting problem for tax research must be in the professional's *sweet spot*—not too simple not too advanced.

Technical tax knowledge is the result of formal education (e.g. undergraduate and graduate tax education and/or law school), firm training programs, CPE workshops, and previous work experience. Hence, technical tax knowledge is largely determined in the micro environment including the properties of formal education and workplace experience.

In addition to technical tax knowledge, conducting research requires that the professional is able to effectively use tax research tools and to write clear, succinct tax memos. Such research skills can be learned through formal education, particularly in graduate school and law school, and at firm-sponsored training. While professionals also hone their research skills through work projects, entering the workplace with strong research skills increases the likelihood of receiving tax research projects. For example,

Dave believed that he moved quickly into conducting tax research because his graduate tax program provided both a sound technical tax background and strong skills in researching and writing tax memos.

Knowledge of both technical tax and tax research skills can be enhanced by the presence of a mentor. A mentor, included as a property (variable) of the workplace, can provide guidance and feedback to ensure the professional is addressing the proper issues, is using appropriate resources, and is preparing the written memo or client document in a suitable format.

Intelligence matched to the discipline, a property of the personal attributes category, also impacts knowledge—you would expect that intelligent individuals would learn quickly. However, intelligence might not be as great a determinant because prospective tax professionals go through a winnowing process prior to entering the profession—first in their formal university programs then in the hiring process. By the time they become tax professionals, they are likely to be *smart enough*. In addition, raw intelligence can be trumped by the next factor—effort.

**Effort.** Effort is a combination of the willingness to work hard, tolerance of ambiguity, and a fascination with tax; all of which are properties of the personal attributes category. First, conducting tax research requires the willingness to work hard—to delve deeply into tax issues, to read, reread, and read again difficult and convoluted tax law. In discussing the research process, Art noted,

“You sit down and read the code and to be able to understand it and understand how the interpretations flow and you have to understand there’s a lot of research

to do. As you well know, [that] can be very boring and very tedious. Finding legislative history sometimes is very difficult, but you have to do it. Otherwise, you're just not doing a good job.”

Even if you enjoy the study of taxation, while you are in the midst of research, the process is not always fun. Individuals who are successful are willing to roll up their sleeves and persevere.

Effort is also increased when the individual enjoys, or at least tolerates, ambiguity. Conducting tax research means that you are addressing a question that is new to you. In fact, you might not fully understand the question when you begin the research process. Professionals who enjoy dealing with ambiguity are more willing to devote time and effort into research. Many of the tax experts indicated that they particularly liked their discipline because of the complexity—neither the questions nor the answers were predetermined. Figuring out tax is like working a puzzle, and they love puzzles. Individuals who prefer clarity and certainty will tend to use routine solutions to avoid the ambiguity of tax research.

Professionals will also put forth greater effort if they have an underlying fascination with tax. They are willing to spend the time and energy engaged in research because they find taxation so interesting. For example, Art described part of the research progress as “tedious and boring” and yet after five decades as a tax professional he stated, “I still love what I do.” In the short-term, you might be able to expend effort to conduct tax research, but it would be difficult to sustain that commitment over time if you did not enjoy the work.

I suggest that if the professional has the requisite knowledge and makes sufficient effort, the tax research project will be successful: the tax issue was addressed to meet the needs of the client and the professional increased his/her knowledge (i.e. learned).

*Theory 2: For each incident of tax research, the increase on the skill continuum is a function of knowledge and effort.*

*Increase on skill continuum = f(knowledge x effort).*

### **Theory 3: Repeatedly Conducting Research to Answer Real-World Tax Issues**

In each successful episode of conducting tax research, the professional *learns* which results in a slight progression on the skill continuum (from novice to expert). However, to become an expert, the professional must continue to learn by conducting tax research on increasing complex issues. The magic occurs when the tax research process happens repeatedly.

The likelihood that a professional will *repeatedly* engage in tax research is determined by a combination of desire and opportunity. The concept of *desire* reflects whether the individual enjoys conducting tax research and; thus, will affirmatively look for occasions to research a new issue or question. In other words, professionals will be more likely to conduct tax research if they like the process—if it is *fun*. I propose that desire is driven by personal attributes including tolerance of ambiguity and fascination with taxation. Tax professionals, who find taxation interesting and who revel in the ambiguity and complexity inherent in taxation, are likely to *want* to conduct tax research and will volunteer for research projects or take the initiative to research questions they have encountered on their own. On the other hand, tax professionals who dislike

conducting tax research—they find it messy and frustrating—are unlikely to volunteer for research projects.

The *desire* to conduct tax research is controlled by the personal attributes of the individual while the *opportunity* for tax research is largely influenced properties of the categories of the micro environment (specifically the workplace) and the macro environment ( including both the U.S. tax environment and the economy). In an environment dedicated to developing expertise, successful completion of one progressive problem solving event would immediately lead to a new problem at the proper level of complexity. However, as previously discussed, developing expertise in taxation is a by-product of the day-to-day work assignments while the primary objectives in the workplace are meeting the needs of clients *and* generating a profit for the firm. Therefore, completion of a tax research project does not necessarily result in an opportunity to engage in a new research project at the appropriate level of complexity. For example, after Josh completed the corporate tax academy, he was ready to apply his increased knowledge of corporate transactions to more complex situations. Instead, he found himself relegated to mundane compliance work.

As a result, the opportunity to repeatedly conduct tax research is affected by the type of clients and the nature of the work of the firm. A firm that has clients with complex tax issues will provide greater opportunities for conducting tax research. Yet, even in large firms with sophisticated tax clients, tax professionals primarily engaged in routine compliance work have less opportunity to engage in tax research. Most of the tax staff accountants in Dave's national CPA firm were primarily engaged in compliance.

However, because of Dave's ability to write and conduct research, he received numerous research assignments, and; thus, he spent little time on routine compliance. Jennifer joined her large CPA firm at a time that were experimenting with separating tax staff into compliance and consulting. Since she had a master's degree in taxation, Jennifer was assigned to the consulting group. While members of the compliance group were preparing tax returns, Jennifer's consulting group was engaged in tax research to address client issues.

A secondment in the national office also affords the opportunity to repeatedly engage in tax research. The national tax office serves as the locus of expertise for the firm. Field offices contact national tax with their more complex client questions; consequently, the tax staff spend a substantial portion of their time conducting research. While working a rotation in the national office of her firm, Jennifer became the online tax advisor for her specialty.

“Back then [national CPA firm] had something called online tax advisor where people could submit...it was any time you needed a tax position written up a level of substantial authority. You'd submit your question to the online tax advisor. And I was the accounting methods responder so I did all the write up for all the accounting methods issues for the firm.”

The macro environment includes both the economy and changes in the U.S. tax law. The economy impacts opportunity to the extent that in that a good economy (when businesses are more profitable), clients have greater incentive to search for tax strategies to reduce their tax liability. Significant changes in the tax law often result in increased

opportunities to engage in tax research. Frank's experience with entering a new tax specialty just as the seminal court cases were being contested put him in a work environment in which one substantial tax research project was linked to the next. Once Karen began to focus on ERISA and employee benefits, she also found herself moving from one tax research event to the next. Interestingly, in a time of substantial change in the tax law, it may be possible to develop expertise without the support of a firm. For example, Hank was completing his PhD at the time the 1986 tax act was passed. Hank decided to focus on corporate alternative minimum tax, a completely new provision. Through intensive research, he wrote a book on the subject and has been recognized as an expert in this tax specialty.

Figure 2 included two trajectories: develop routines and progressive problem solving. Many tax professionals are on the develop routines curve; as they become more proficient at taxation, they begin to develop routine solutions to the common problems. Perhaps they do not enjoy tax research and do not have the desire to engage in tax research. Alternatively, they might be working in environments that simply do not provide the opportunity to address complex tax problems. Whatever the cause, many tax professionals will adequately serve the tax needs of their clients, but will not achieve expertise.

Still, some professionals will develop expertise—they are on the progressive problem solving curve—they avoid routine solutions to new problems and continue to conduct research to address real-world tax issues. A few of them may have a very steep trajectory to expertise and develop expertise in a relatively short period of time. In

Figure 5, I use a steep slope to depict a relatively direct path to expertise. Frank's experience is reflected in this diagram. Frank began his career working for a corporation that was engaged in seminal litigation in a newly developing area of taxation. Frank was immersed in researching and writing memoranda—then researching and writing additional memoranda. Virtually all of his time was spent in progressive problem solving and very little time was spent on routine work. This direct trajectory to expertise might be quite common for a talented musician in a music conservatory, but would be less common in the work environment for tax professionals. Even in Frank's situation, the

**Figure 5. Work Environment Offering Direct Path to Expertise**

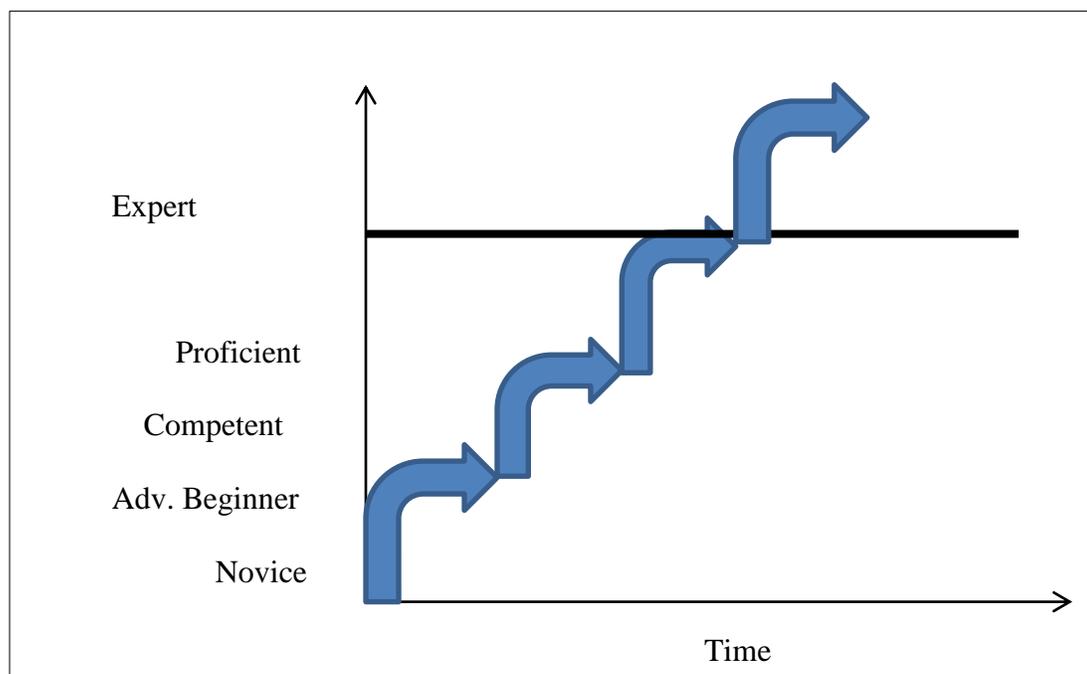


Figure 5. Work environment offering a direct path to expertise. This figure represents an environment where the professional moves immediately from one progressive problem solving event to the next.

primary aim of his firm was not developing experts—it was winning litigation. The fact that the work he needed to do to meet the needs of his firm coincided with what he needed to do to develop expertise was fortuitous, but still a coincidence.

In Figure 6, I depict a more typical path to expertise. This situation reflects a compliance-oriented position in which progressive problem solving events occasionally punctuate the routine work. This work environment reflects Josh’s experience in his compliance-oriented jobs. He had to make a concerted effort to engage in tax research

**Figure 6. More Typical Work Environment for Tax Professionals**

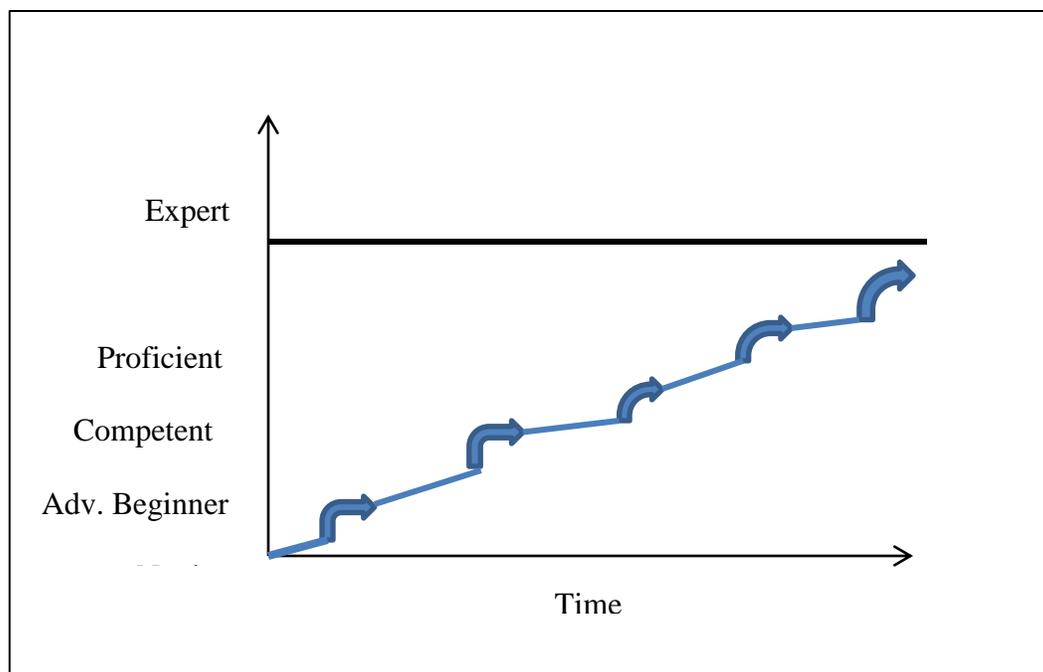


Figure 6. More typical work environment for tax professionals. This figure illustrates periods of routine work punctuated with opportunities to engage in progressive problem solving.

until he moved to a position in national tax, where the percentage of his time devoted to conducting tax research increased—as did his skill. Dave also began his professional

career engaged in routine compliance assignments, but his skill in conducting tax research resulted in his eventually spending a significant portion of his time conducting tax research.

*Theory 3: To gain expertise, a professional must repeatedly conduct research to address real-world tax issues. Tax professionals will repeatedly engage in tax research to the extent that they have the desire and opportunity.*

## **Luck**

Luck is the only category that has not already been incorporated into the theories of how professionals develop technical-tax expertise. Every tax expert that I interviewed spoke of a situation that was fortuitous—most of them specifically mentioned some variant of luck, be it kismet, serendipity, or just being in the right place at the right time. Luck could materialize in working with an individual who became an outstanding mentor, in entering the profession at the time of a major change in taxation, or in rejecting an excellent job offer to first earn a graduate degree. Luck or good fortune never resulted in a direct reward; instead, it provided an opportunity. I propose that the category of luck reflects randomness in the model. If professionals were able to capitalize on an opportunity, they experienced good fortune. An obstacle that they could not surmount would result in bad luck.

## **Summary**

My objective in this section was to incorporate the core concepts, categories and properties of categories (variables) discussed in the previous chapter into a theory on how

professionals become tax experts. I began with existing theory. First, I combined the Dreyfus & Dreyfus model of expertise with the Bereitter and Scardamalia concept of progressive problem solving (Figure 2). In the resulting model, I suggest that over time, individuals who engage in progressive problem solving, addressing increasingly more complex problems, will advance on the skill continuum and eventually achieve expertise. Individuals who instead develop routines will increase in skill, but are unlikely to become more than proficient. Second, I refined Bereitter and Scardamalia's concept of progressive problem solving by suggesting that progressive problem solving involves addressing a series of discrete incidents with each successful solution leading to a slight increase in skill and where each subsequent problem is slightly more complex (Figure 3). Thus, describing the development of expertise requires understanding how a single progressive problem solving event increases skill as well as understanding the linkage of one progressive problem solving incident to the next in the journey to expertise.

To take the model from a general discussion of expertise to a specific examination of expertise in taxation, I proposed that *conducting research to address real-work tax issues* (the core concept identified in the previous chapter), represents progressive problem solving for tax professionals. Then, adapting Vroom's model of performance, I suggested that increasing skill in taxation as a result of conducting research is a function of knowledge and effort (*Increase on skill continuum = f(knowledge x effort)*). Tax professionals who are presented with a tax issue for which they have the appropriate level knowledge of the technical tax issue, have the requisite tax research skill, and are willing to expend the effort, will increase their skill (Figure 4). Since expertise in

**Figure 7. Linkage of Core Concept & Categories to Grounded Theory**

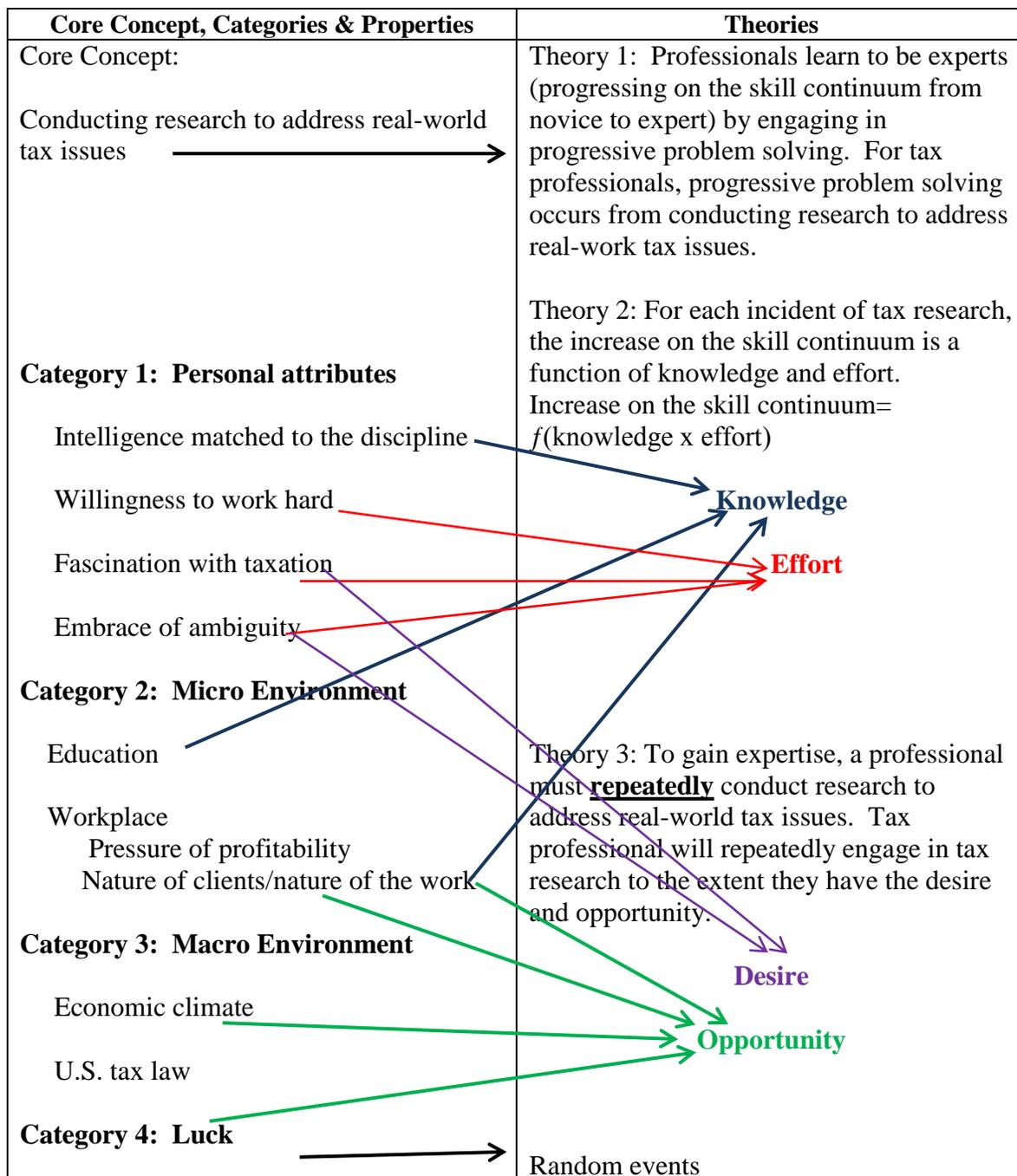


Figure 7. Linking core concepts, categories, and property of categories (variables) to grounded theory. This figure relates the variables (properties of the categories) to the theories 1, 2, and 3.

taxation does not result from a single instance of tax research—the professional needs to repeatedly engage in researching successively more complex research issues, I proposed that the tax professionals will repeatedly engage in tax research to the extent that they have the desire (they enjoy the ambiguity and complexity of taxation) and opportunity (their firms have clients with complex tax issues). Individuals who have the desire to conduct tax research—they enjoy the ambiguity and complexity of tax research—will seek tax research opportunities. Finally, I suggest that luck, whether in the form of good fortune or bad luck, inserts an element of randomness. Figure 7 links the core concept, properties and categories of properties identified in chapter four to the following three theories that describe on how professionals develop expertise in tax accounting:

- Theory 1: Professionals learn to be experts (progressing on the skill continuum from novice to expert) by engaging in progressive problem solving. For tax professionals, progressive problem solving occurs from conducting research to address real-work tax issues.
- Theory 2: For each incident of tax research, the increase on the skill continuum is a function of knowledge and effort. Increase on the skill continuum=  $f(\text{knowledge} \times \text{effort})$ .
- Theory 3: To gain expertise, a professional must repeatedly conduct research to address real-world tax issues. Tax professional will repeatedly engage in tax research to the extent they have the desire and opportunity.

## **Recommendations for Future Research**

In this GTM study, I proposed three interconnecting theories to explain how professionals develop expertise in taxation. Since a GTM study proposes, but does not test a theory, future research would be needed to determine whether these theories accurately reflect how technical-tax expertise is developed. Research questions that could begin to test the three theories suggested in this studies include:

- Are there differences in the quantity and quality of learning between conducting tax research and completing compliance projects?
- Do professionals who become technical-tax experts engage in more tax research than individuals who remain experienced non-experts?
- What are the characteristics of a successful tax research project? What type of support and guidance increases the quality of research?
- What workplace characteristics (e.g. number of employees, type of clients) promote or inhibit the development of expertise? Can a determined individual overcome a hostile or non-supportive work environment?
- Are the personal attributes (e.g. intelligence, willingness to work hard, tolerance of ambiguity, fascination with taxation) of technical-tax experts different from experienced non-expert tax professionals?
- Can tax expertise only be developed in the workplace?
- Do graduate tax programs accelerate the process of developing technical-tax expertise?

I am particularly interested in exploring the role that graduate tax education can play in developing technical-tax expertise. While undergraduate tax programs include a wide array of accounting students—not just future tax professionals, graduate masters of taxation programs are specifically designed for tax professionals. Thus, these programs should include a curriculum that supports the development of technical-tax knowledge. First, further research is necessary to determine whether existing tax programs are structured to allow students to improve their knowledge and skills in conducting tax research. Next, research should address what changes can be made to enhance their effectiveness in developing technical-tax expertise.

This study solely focused on how professionals develop technical-tax expertise; however, not all tax professionals may need expertise in technical tax. It is likely that technical tax is only one of several types of expertise in taxation. For example, professionals may be compliance experts—they excel at designing and maintaining systems to promote accuracy and efficiency in compliance. In addition, there may be an expert level of performance in client service. These individuals might be experienced non-experts in the technical-tax arena, but have expertise in communicating with and delivering services to clients. Additional research would be needed to determine if expertise exists for these other categories of tax professionals; and, if there is expertise, how this expertise is developed.

At a broader level, there is the opportunity to determine how members of other professions develop expertise. Do other professions have core activities, which are

analogous to conducting tax research, that cause the development of expertise in that discipline?

### **Implications**

This study has implications for the individual tax professional, for CPA firms (and other business entities which employ tax professionals), for human resource development (HRD) professionals that provide training and development opportunities for tax professionals, and for colleges and universities that offer graduate and undergraduate programs. While the tax profession includes both attorneys and accountants, I will be concentrating on the implications for accountants. First, my professional background is in accounting: I have a master's degree in taxation (a graduate accounting degree), I taught college accounting, I directed tax training and development programs for a national CPA firm, and I am a CPA (inactive). In addition, this study has been oriented towards the accounting side of the tax profession. The attorneys that I interviewed had all served as tax professionals in CPA firms. The primary reason I included attorneys was to determine whether lawyers had an advantage in developing technical-tax expertise. If it would have become clear that a law degree was required to become a tax expert, my advice to CPAs would have been, "Get a law degree." But, my research clearly shows that this is not the case. It appears that tax expertise can be developed with either an accounting or a legal background. Although much of the discussion below is equally relevant to attorneys, my focus will be on implications for the accounting profession.

**Individual.** I was captivated and inspired by the life stories I heard in my interviews with the tax experts. The most senior experts had spent decades in the professional, were past the traditional retirement age, and had the financial wherewithal to retire; yet, they remained active in taxation because they still loved their work. One of the most important implications for the individual professional may be that the time and energy devoted to developing this expertise can result not only in career success, but also in overall life satisfaction. However, professionals cannot *will* themselves into becoming tax experts if they do not possess the requisite personal attributes. This research suggests that tax experts have the following personal attributes: intelligence matched to the discipline, willingness to work hard, tolerance of ambiguity, and fascination with taxation. Except for the willingness to work hard, the individual has little control over these attributes—either the qualities necessary to immerse oneself in taxation are present or they are not. The key for professionals who have those personal attributes, for whom tax is a *calling*, is to take the initiative to develop their expertise in taxation. This initiative can take the form of seeking opportunities to conduct tax research, increasing their technical-tax and tax research knowledge, requesting rotations to their national tax office, and identifying opportunities to develop expertise in new areas of tax law.

***Seeking opportunities.*** Perhaps the most important implication for the individual who is seeking to develop technical-tax expertise is to take advantage of opportunities to conduct tax research. Individuals should not only volunteer for research projects, but also identify opportunities to conduct research. For example, use slow periods with unbillable hours to ask for a research project or suggest a project.

***Increasing technical-tax and tax research knowledge.*** While professionals can proactively pursue research opportunities, they can also take actions to increase the likelihood that they will be assigned research projects. Many of the experts in this study received a disproportionately larger share of research assignments than their peers because they had produced well-researched, clearly-written tax memos—“success leads to success.” Thus, individuals should not only seek to conduct tax research, but they should also pursue opportunities to develop the underlying skills to ensure successful projects.

The theory generated in this study suggests that a successful research project requires an individual to have the requisite level of technical tax knowledge and to know how to research and write effectively. That you would need technical-tax knowledge to develop technical tax-knowledge appears to be a double-bind; and, to a certain degree it is. However, professionals with a greater level of technical-tax knowledge are able to successfully address more complex issues. For example, Dave entered the profession after earning a master’s degree in taxation. Where other new tax staff might have had two weeks of partnership taxation in their undergraduate tax classes, Dave had completed an entire graduate course in partnerships. In addition, each course in his program required that he conduct research and write memos. Thus, he began his professional career with a greater amount of knowledge of technical tax issues and he was more experienced in researching and writing tax memos than his peers. He was repeatedly assigned research projects because he had proved adept at conducting research. He entered a virtuous circle: with each new project, he increased his knowledge and ability

to conduct tax research which led to new research projects. Professionals who are striving to develop technical-tax expertise need to find ways to enter this virtuous circle. For many, additional formal education in taxation may be the best option.

All of the technical-tax experts I interviewed had either law degrees or graduate degrees. Although graduate degrees cannot provide experience with real-world problems, high-quality master of taxation programs will accelerate knowledge of established tax law and can also foster the development of research and writing skills. An alternative to a master of taxation degree would be to earn a law degree. The law degree would improve research skill, but it would not provide as much exposure to technical-tax knowledge. Generally, it would make sense to pursue a law degree if your tax specialty was closely tied to litigation (for example, tax controversy).

A formal graduate degree (either in taxation or law) is expensive and time intensive. In addition, although an increasing number of university programs are available online; many tax professionals still do not have access to high-quality programs. However, additional technical-tax and tax research training and education are available outside of the university setting. Professionals have the opportunity to participate in training offered by their firms or through outside CPE programs. Jennifer noted that her annual staff training at her large national CPA firm included technical training in her specialty as well as research and writing programs. Josh credits his firm's corporate tax academy (an intensive multi-day, multi-session program) with his desire to focus on his area of expertise. He also cited education at high-level professional conferences as increasing his level of technical-tax knowledge in his discipline.

To meet the licensing requirements for CPAs, tax professionals in CPA firms are required to complete a minimum of 40 CPE hours annually. Too many professionals treat these mandated hours of training as an annoyance they have to endure to maintain their licenses. They may be physically in the training room or officially logged into the online program; however, they are not engaged learners and; thus, receive little benefit from these programs. Alternatively, professionals can choose to approach these required training hours as a welcome opportunity to increase their level of knowledge.

***Rotations in national tax office.*** Large, national CPA firms have national offices which provide expertise in tax specialty areas for the firm. Many of the experts I interviewed led national tax practice for their specialty after they had already gained expertise. However, two experts had rotations in their national tax offices when they were tax managers. Both of them credited their stints in national tax with accelerating their development of expertise. While a rotation in the national office is not required to develop expertise, these rotations can be invaluable. A tax professional who has determined that he/she has interest in developing further expertise should make it known that they want to develop expertise and would be interested in a rotation in the national tax office.

***New area of taxation.*** Several of the experts I interviewed had the good fortune to enter the profession after major changes in the tax code or as new areas of tax law were developing. Essentially, they were able to get in on the ground floor and develop expertise relatively early in their careers. While there has not been a major change in the tax code since 1986, new provisions have been added to the code and have provided

some opportunity to develop expertise. For example, the domestic activities production deduction (I.R.C. §199 which was enacted in 2006) provided an attractive tax deduction to businesses able to meet the specific requirements of this code section. Although this deduction is probably not substantial enough area on which to base career expertise, it could have provided an entree into tax expertise. At some point, the U.S. tax code is due for a major overhaul. A substantial change to the tax code provides an enormous opportunity for individuals to develop expertise.

*Summary of implications for the individual.* Ultimately, expertise resides in the individual tax professional. Rarely, will professionals find expertise thrust upon them; instead, these prospective tax experts need to pursue opportunities to gain expertise. Since technical-tax expertise is developed through tax research, the professional needs to seek opportunities to conduct research which are either assigned or self-generated. Professionals can increase the likelihood of being assigned research projects by being effective researchers—having both sufficient pre-existing technical-tax knowledge as well as tax research/writing skills. Professionals can improve their odds of developing expertise by finding work opportunities that promote the development of expertise such as working in a rotation of national tax. Finally, changes in the tax law provide the opportunity to accelerate the development of expertise.

**The firm.** The preceding section discussed the implications of this research study for the individual professional. This section will explore the implications to the firm. Because expertise is developed by repeatedly researching real-world tax issues and because real-world tax issues arise from client issues, tax expertise is almost exclusively

developed in either the tax department of a CPA firm, in the corporate tax department, or in a tax-related agency of the government (e.g. the I.R.S). As indicated throughout this study, the primary objective of business entities is to meet profitability goals (either to generate a profit through serving clients or to ensure the corporation has legally minimized its tax liability) not to develop technical-tax experts. Yet, for long-term survival, CPA firms (and corporate tax departments) need to be providing expertise rather than routine solutions. For example, routine compliance work involves determining the tax liability and preparing the tax return. In essence, tax return preparation is a commodity; thus, clients are seeking the lowest cost provider, and; increasingly, this work is being outsourced and automated. On the other hand, tax planning and tax consulting involve working with clients to determine their personal or business objectives in a tax efficient manner. Tax planning/consulting is not a commodity and this sophisticated tax planning requires the knowledge and skill of a tax expert. Tax expertise enables firms to operate in the non-commodity arena. Even though firms do not exist to develop technical-tax expertise, they cannot exist without this expertise. Thus, it is important that firms are able to identify individuals who are likely to become tax experts and create an environment that encourages the development of experts.

***Identifying individuals with the personal attributes of the technical tax expert.***

Tax departments are likely include a number of different types of experts besides the tax-technical expert—for example, the client service expert or the business generating expert. In addition, it is likely that experienced non-experts (proficient and competent performers) may play important roles in their firms. In other words, not every tax

professional needs to be an expert. As a result, firms need to provide opportunities for professionals to find their proper place in the organization.

The research suggests that individuals drawn to technical-tax expertise possess specific personal attributes. Rather than trying to identify these individual by their personal attributes, I suggest that firms will be able to best identify individuals with the potential to develop into technical-tax experts through providing research opportunities to their new professionals. Professionals, who excel at tax research and enjoy the research process, should be offered more research assignments when they become available. In addition, one of the criteria for a rotation in the national tax office should be the interest and ability to conduct tax research.

*Creating the appropriate environment for developing expertise.* Many tax professionals enter the workplace having taken only one or two tax classes. As a result, they may have minimal technical-tax knowledge and may not know how to conduct tax research. If they are to become experts, they will have to develop the requisite knowledge and skill in firm training programs, through additional graduate work, and/or on the job.

CPA firms and tax departments within corporations have the options of developing internal training, sending their staff to external programs, and encouraging their professionals to pursue graduate training in taxation. The choice of the type of training is not an either or choice—all options can be employed.

As important as firm training and additional graduate education is to increasing foundational tax knowledge, the lion's share of the development of expertise happens on the job. Business development is good for growing both profits and experts. Firms that

have clients with complex issues provide a fertile environment for developing expertise—these projects provide the opportunity to engage in ongoing research. Then, the firm needs to ensure that new professionals have the opportunity to work on these more complex projects that will require tax research. In addition, firms can encourage more senior staff to provide feedback and guidance for the less experienced professionals.

*Summary of implications for the firm.* In the theory generated in this study, the firm plays a vital role in the development of technical tax expertise. First, research into real-world tax issues most commonly occurs in the workplace. Second, the theory suggests that professionals need to repeatedly engage in tax research, and; they will have a greater opportunity to engage in research if the firm has clients with complex business and tax issues. Fortunately, developing tax expertise is not at odds with maintaining the profitability of the firm. Instead, profitable tax consulting and planning requires that tax professionals tackle new, complex tax issues. Then, technical-tax experts can identify the issues and oversee the research while professionals who are developing expertise conduct the tax research.

**Human resource development professionals.** HRD professionals in training and development departments can play an important role in helping professionals develop expertise in taxation. The theory developed in this study suggests that to conduct a successful tax research project, the professional needs the appropriate knowledge of the technical tax issue and must also be able to conduct tax research. HRD professionals in

training and development departments can partner with the technical-tax experts to address both of these issues.

Technical-tax experts have subject matter expertise while the HRD professionals have expertise in educating adults. By partnering, they can create programs that are more effective at increasing knowledge. Too often, programs focus on transmitting as much information as possible in as short a time as possible—the tax professional may attend 40 hours of training in a single week. The analogy of drinking from a fire hose is apt. HRD professionals can *chunk* the learning, help structure more interaction, and create blended learning solutions that allow the training to take place over several weeks rather than several hours. In other words, HRD professionals can improve comprehension and increase the amount of learning that occurs. In addition, by working with the subject matter experts in the firm, the HRD professionals are able to tailor the training to the needs of the firm. For example, Kuhlmann, Knepper, and Coustan (2011), describe a firm writing program which incorporated writing and tax research skills. The program used the firm's tax research template; thus combining knowledge of how to write an effective tax memo with specific training on how to write an effective tax memo following firm standards.

HRD professionals can also assist the development of expertise by encouraging professionals who are in the process of developing expertise to teach technical tax programs for tax staff. Several of the tax experts in this study indicated that they increased their expertise by teaching others. The process of developing a class or simply

preparing to teach an existing class requires study that may be equivalent to conducting tax research.

*Summary of implications for the training and development departments.* While a large portion of the learning takes place on-the-job, firm training programs can foster the development of technical tax knowledge as well as help professionals learn to conduct tax research. HRD professionals can assist the subject matter experts develop more effective training programs. Finally, HRD professionals can encourage teaching as a means of developing technical-tax expertise.

**Colleges and universities.** Individuals cannot enter the tax profession until they have earned at least an undergraduate degree, and, typically; these undergraduate programs require only one or two tax courses. In addition, the vast majority of students in undergraduate classes are intent on careers in audit and accounting rather than taxation. Thus, these undergraduate classes are charged with providing a framework for understanding of taxation rather than having the sole focus of developing tax expertise. However, even if developing future tax experts cannot be the primary purpose of the undergraduate tax programs, these classes can provide a firm foundation in taxation for both future auditors and future tax accountants.

In essence, the first tax classes introduce a new language (e.g. boot, basis, for AGI, from AGI, gain realized, gain recognized, earnings and profits, filing status, AMT) as well as an enormous amount of content. Too often, the first courses consist of a barrage of random facts. Many professionals did not decide to enter the field of taxation until after they had worked as accountants for several years. However, several of the

experts indicated that an inspirational tax professor piqued their interest in taxation. These initial tax classes need to provide a foundational knowledge in the structure of taxation, but gifted professors will also share their fascination with taxation—its richness and marvelous complexity. Finally, since the ability to conduct tax research appears to be the key to developing technical-tax expertise, prospective tax professionals need an exposure to the tax research tools and the tax research process.

While undergraduate tax classes provide a general background in taxation to a broad audience, graduate tax programs should focus on developing tax expertise. A graduate program cannot fully develop expertise because individuals need exposure to real-world tax issues over a period of time, and; this exposure happens in the workplace. But, graduate tax classes can provide a solid background in the underlying theory of taxation, a broad understanding of the various tax specialties, as well as in-depth study in areas of specialization.

This research suggests that professionals gain expertise by conducting tax research; therefore, graduate tax programs need to teach tax research skills. Students should receive appropriate education on the levels of tax authority, the qualities of a good tax research, and the tools available to conduct research. In addition, the programs need to provide support for improving their writing skills. Throughout the program, they need to write research memos and receive feedback on not only their tax-technical content but also on the quality of the writing. Thus, writing and research should not be relegated to a single class but should be integrated into the technical-tax classes as well.

*Summary of implications for colleges and universities.* Professionals cannot gain entrance to the tax profession without at least a bachelor's degree in accounting. However, many professionals with only undergraduate degrees are ill-prepared to become tax experts: they have marginal knowledge of technical tax and they may not have any training on how to conduct tax research. A primary recommendation is to ensure undergraduate programs provide at least some exposure to tax research. Graduate programs should be oriented to preparing professionals to become technical-tax experts. These professionals will develop expertise in the workplace, but their graduate programs will provide foundational technical-tax knowledge and sound research skills to enable them to conduct tax research to address real-world problems.

## **Conclusion**

In this grounded theory methodology study, my objective was to understand how professionals developed technical-tax expertise. I became interested in this topic because I had observed that while most tax professionals failed to develop expertise despite many years of practice, a small subset did become experts. What allowed this select group to develop technical-tax expertise while most tax professionals did not?

This research question led me to explore literature on the development of expertise. The research showed unequivocally that expertise was a learned behavior. Intelligence could increase the likelihood of developing expertise, but intelligence without other factors (such as motivation and hard work) would not lead to expertise. The literature also documented that expertise was learned over an extended period of time with appropriate types of practice. Most of the research examined disciplines that

focused on developing expertise (e.g. music or sports academies). In a discipline like tax accounting in which work assignments are generated based on the needs of clients rather than on whether this assignment will promote the development of expertise, how did anyone receive the kind of practice that allowed them to develop expertise?

In my research, I determined that the key activity that promoted the development of expertise was repeatedly conducting research to answer real-world tax issues. I interviewed nine technical-tax experts and three non-expert tax professionals. At first glance, these experts would appear to have little in common—they did not have the same academic preparation nor did they have the same work history. However, under the surface, they had remarkably similar personal attributes—intelligence matched to the discipline, willingness to work hard, fascination with taxation, and tolerance of ambiguity. In addition, the environmental factors they faced (e.g. the economy, the U.S. tax laws, and the type of firm in which they were employed), helped explain the ease or difficulty they had in developing their expertise. Thus, their personal attributes made it likely that they would both excel and enjoy tax research and the environmental factors they faced either supported or impeded their opportunities to conduct tax research.

This research resulted in three interconnected theories that suggest how professionals develop technical-tax expertise. These theories provide a platform for future research for those who are interested in fostering the development of technical-tax expertise.

## References

- Adelson, B. (1984). When novices surpass experts: The difficulty of a task may increase with expertise. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 10, 483-495.
- Albrecht, S. & Sack, R. (2000). *Accounting education: Charting the course through a perilous future*. Sarasota, FL: American Accounting Association.
- American Institute of Certified Public Accountants (AICPA) membership requirements. (2012). Retrieved on January 23, 2012, from <http://www.aicpa.org/Membership/Requirements/CPE/Pages/default.aspx>.
- Anderson, J. (1982). Acquisition of cognitive skill. *Psychological Review*, 89, 396-406.
- Annels, M. (1997). Grounded theory method, Part I: Within the five moments of qualitative research. *Nursing Inquiry*, 4(2), 120-129.
- Annels, M. (1996). Grounded theory method: Philosophical perspectives, paradigm of inquiry, and postmodernism. *Qualitative Health Research*, 6(3), 379-393.
- Baird, L. (1982). *The role of academic ability in high-level accomplishment and general success*. New York: College Entrance Examination Board.
- Beard, D. (1998). The status of internships/cooperative education experiences in accounting education. *Journal of Accounting Education*, 15 (3/4), 507-516.
- Becker, H. (1958). Problems of inference and proof in participative observation. *American Sociological Review*, 23, 625-660.
- Benner, P. (1982). From novice to expert. *American Journal of Nursing*, 82, 402-407.

- Benner, P. (2004). Using the Dreyfus model of skill acquisition to describe and interpret skill acquisition and clinical judgment in nursing practice and education. *Bulletin of Science, Technology, and Society*, 24, 188-199.
- Bereiter, C. & Scardamalia, M. (1993). *Surpassing ourselves: An inquiry into the nature and implications of expertise*. Chicago, IL: Open Court.
- Blumer, H. (1969). *Symbolic Interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice-Hall.
- Boisot, M. & McKelvey, B. (2010). Integrating modernist and postmodernist perspectives on organizations: A complexity science bridge. *Academy of Management Review*, 35, 415-433.
- Bonner, S, Davis, J, and Jackson, B. (1992). Expertise in corporate tax planning: The issue identification stage. *Journal of Accounting Research*, 30, 1-28.
- Bouwman, M. (1982). The use of accounting information: Expert versus novice behavior. In G. Ungson & D. Braunstein (Eds.), *Decision Making: An interdisciplinary inquiry* (pp. 134-167). Boston, MA: Kent.
- Brigham Young University Marriott School: BS Accountancy Overview. (2012)  
Retrieved on January 23, 2012, from  
<http://marriottschool.byu.edu/bsacc/academics/overview>.
- Bryan, W. & Harter, N. (1897). Studies in the physiology and psychology of the telegraphic language. *Psychological Review*, 6, 345-375.

- Bryant, A. (2003). A constructive/ist response to Glaser. [25 paragraphs]. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research [On-line Journal]*, 4, Article 5.
- Camerer, C., & Johnson, E., (1991). The process-performance paradox in expert judgment: How can experts know so much and predict so badly? In K. Ericsson & J. Smith (Eds.), *Toward a general understanding of expertise: Prospects and limits* (pp. 195-217). New York: Cambridge University Press.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Los Angeles, CA: Sage.
- Charness, N., Reingold, M, Pomplun, M., & Stampe, D. (2001). The perceptual aspect of skilled performance in chess: Evidence from eye movements. *Memory & Cognition*, 29, 1146-1152.
- Chase, W. & Ericsson, K. (1981), Skilled memory. In J. Anderson (Ed.), *Cognitive skills and their acquisition: Symposium on Cognition* (pp. 141-189). Hillsdale, NJ: Erlbaum Associates.
- Chi, M., Glaser, R., & Farr, M. (1988). *The nature of expertise*. Hillsdale, N.J.: Erlbaum.
- Chiovitti, R. F., & Piran, N. (2003). Rigor and grounded theory research. *Journal of Advanced Nursing*, 44(4), 427-435.
- Choo, F. (1989). Expert-novices differences in JDM research. *Journal of Accounting Literature*, 8, 106-136.

- Cloyd, B. (1995). Prior knowledge, information search behaviors, and performance in tax research tasks. *The Journal of the American Taxation Association*, 17 [Supplement], 82-107.
- Colbert, J. (1989). The effects of experience on auditor's judgments. *Journal of Accounting Literature*, 8, 137-149.
- Davis, J. and Solomon, I. (1989). Experience, expertise, and expert performance research in public accounting. *Journal of Accounting Literature*, 8, 150-164.
- De Groot, A. (1965). *Thought and choice in chess*. The Hague: Mouton. (Original work published in 1946).
- Denzin, N. (2004). Symbolic interactionism. In U. Flick, E. Kardoff & I. Steinke (Eds.), *A companion to qualitative research* (pp. 81-86). Thousand Oaks, CA: Sage.
- Dizik, A. (2009, April 15). Ernst & Young trains its own. *The Wall Street Journal*. Retrieved from [//online.wsj.com/article/SB123975976021119493.html](http://online.wsj.com/article/SB123975976021119493.html).
- Dreyfus, H. & Dreyfus, S. (1986). *Mind over machine*. New York, NY: The Free Press.
- Dubin, R. (1978). *Theory building: Revised edition*. New York: The Free Press.
- Egan, T. (2002). Grounded theory research and theory building. *Advances in Developing Human Resources*, 4, 277-295.
- Ericsson, K. (2005). Recent advances in Expertise Research: A commentary on the contributions to the special issue. *Applied Cognitive Psychology*, 19, 233-241.
- Ericsson. (2006). *The Cambridge handbook of expertise and expert performance*. New York: Cambridge University Press.

- Ericsson, K. (2006a). The influence of experience and deliberate practice on the development of superior expert performance. In K. Ericsson (Ed.), *The Cambridge handbook of expertise and expert performance* (pp. 685-705). New York: Cambridge University Press.
- Ericsson, K. and Charness, N. (1994). Expert performance: Its structure and acquisition. *American Psychologist*. 49(8), 725-747.
- Ericsson, K., Krampe, R., & Tesch-Romer. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100, 363-406.
- Ericsson, K. and Poulson, P. (1988). A cognitive analysis of exceptional memory for restaurant orders. In M. Chi, R. Glaser, & M. Farr (Eds.), *The nature of expertise* (pp. 23-70). Hillsdale, NJ: Erlbaum.
- Ericsson, K., Prietula, M., & Cokely, E. (2007). The making of an expert. *Harvard Business Review*. 85(7/8), 115-121.
- Ericsson, K & Smith, J. (1991). Prospects and limits of empirical study of expertise: An introduction. In K. Ericsson & J. Smith (Eds.), *Toward a general theory of expertise: Prospects and limits* (pp. 1-38). New York: Cambridge University Press.
- Expert. (n.d.). (2012) In Merriam-Webster's online dictionary (11<sup>th</sup> ed.). Retrieved from <http://www.merriam-webster.com/dictionary/expert>.
- Expertise. (n.d.). (2012). In Merriam-Webster's online dictionary (11<sup>th</sup> ed.). Retrieved from <http://www.merriam-webster.com/dictionary/expertise>.

- Fassinger, R. (2005). Paradigms, praxis, problems, and promise: Grounded theory in counseling psychology research. *Journal of Counseling Psychology, 52*, 156-166.
- Fendt, J. & Sachs, W. (2008). Grounded theory method in management research. *Organizational Research Methods, 11*, 430-455.
- Fields, R. (2005). Myelination: An overlooked mechanism of synaptic plasticity? *The Neuroscientist, 11*, 528-531.
- Fook, J., Ryan, M., & Hawkins, L. (2000). *Professional expertise: Practice, theory and education for working in uncertainty*. London: Whiting & Birch
- Freifeld, L. (2010). PWC's 3 Peat. *Training, 47*(2), 26-33.
- Galton, F. (1869). *Hereditary genius: An inquiry into the law and its consequences*. London: Macmillan.
- Geisler, C. (1994). *Academic literacy and the nature of expertise: Reading, writing and knowing in academic philosophy*. Hillsdale, NJ: Erlbaum.
- Glaser, B. (1965) The constant comparative method of qualitative analysis. *Social Problems, 12*, 436-445.
- Glaser, B. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA: Sociology Press.
- Glaser, B. (1992). *Emergence vs. forcing: Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Glaser, B. (1998). *Doing grounded theory: Issues and discussion*. Mill Valley, CA: Sociology Press.

- Glaser, B. (2002). Constructivist grounded theory? [47 paragraphs]. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research [On-line Journal]* 3, Art. 12.
- Glaser, B. (2003), *The grounded theory perspective II: Description's remodeling of grounded theory methodology*. Mill Valley, CA: Sociology Press.
- Glaser, B., & Strauss, A. (1965). *Awareness of dying*. Chicago, IL: Aldine.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago, IL: Aldine.
- Glaser, R. (1984). Education and thinking: The role of knowledge. *American Psychologist*, 39(2), 93-104.
- Gobet, F. (1998). Expert memory: A comparison of four theories. *Cognition*, 66, 115-152.
- Goulding, C. (2005). Grounded theory, ethnography and phenomenology: A comparative analysis of three qualitative strategies for marketing research. *European Journal of Marketing*, 39, 294-308.
- Gujarathi, M. & McQuade, R. (2002). Service-learning in business schools: A case study in an intermediate accounting course. *Journal of Education for Business*, 77, 144-150.
- Heath, H., & Cowley, S. (2004). Developing a grounded theory approach: A comparison of Glaser and Strauss. *International Journal of Nursing Studies*, 41, 141-150
- Hethcock, B. (2011, October 18). Deloitte U training venue to open in Westlake. *Dallas Business Journal*. Retrieved from <http://www.bizjournals.com/dallas/news/2011/10/18/deloitte-u-training-to-open-in.html>.

- Hite, P., Hasseldine, J., Al-Khory, A., James, S., & Toumi, M. Tax practitioners and tax compliance. In D. Salter (Ed.), *Contemporary issues in taxation research* (pp. 17-43). London: Ashgate.
- Holyoak, J. (1992). Symbolic connectionism: Toward a 3<sup>rd</sup> generation of theories of expertise. In K. Ericsson & J. Smith (Eds.). *Toward a General Theory of Expertise*. (pp. 301-335). New York: Cambridge University Press.
- Hutchinson, S., & Wilson, H. S. (2001). Grounded theory: The method. In P. L. Munhall (Ed.), *Nursing research: A qualitative perspective, 2nd ed.* (pp. 209-244). New York: National League for Nursing Press.
- Johnson, E. (1988). Expertise and decision making under uncertainty: Performance and process. In M. Chi, R. Glaser, & M. Farr (Eds.), *The nature of expertise* (pp. 287-310). Hillsdale, NJ: Erlbaum.
- Keller, R. & Crosley, C. (2011) The next 10 years. *Accounting Today*, 25(7), 40-44.
- Kennedy, T. & Lingard, L. (2006). Making sense of grounded theory in medical education. *Medical Education*, 40, 101-108.
- Kuchinke, K. (1997). Employee expertise: The status of the theory and the literature. *Performance Improvement Quarterly*. 10, 72-86.
- Kuhlmann, D., Knepper, M., & Coustan, H. (2011). Classroom to clients: A blended approach to teaching writing skills. *The Tax Adviser*.
- Lally, R. (2006). *Theory of acclimation* in newly diagnosed breast cancer patients. (Unpublished doctoral dissertation). University of Minnesota, Minneapolis, MN.

- Lazarsfeld, P. & Robinson, W. (1940). The quantification of case studies. *Journal of Applied Psychology*, 24, 817-825.
- Lehmann, A. & Ericsson, K. (1998). The historical development of domains of expertise: Performance standards and innovations in music. In A. Steptoe (Ed.), *Genius in the mind* (pp. 67-94). Oxford, UK: Oxford University Press.
- Locke, K. (1996). Rewriting the discovery of grounded theory after 25 years? *Journal of Management Inquiry*, 5, 239-245.
- Lum, G. (2003). Towards a richer conception of vocational preparation. *Journal of Philosophy of Education*, 37, 1-15.
- Martin, C. & Wilkerson, J. (2006). An examination of the impact of accounting internships on students attitudes and perceptions. *The Accounting Educators Journal*, 16, 129-138.
- Martin, P. & Turner, B. (1986). Grounded theory and organizational research. *The Journal of Applied Behavioral Science*, 22, 141-157.
- Meinz, E. & Hambrick, D. (2010). Deliberate practice is necessary but not sufficient to explain individual difference in piano sight-reading skill: The role of working memory capacity. *Psychological Science*, 21, 914-919.
- Mills, J., Chapman, Y., Bonner, A., & Francis, K. (2007). Grounded theory: A methodological spiral from positivism to post modernism. *Journal of Advanced Nursing*, 58, 72-79.
- Patel, V., & Groen, G. (1991). The general and specific nature of medical expertise: A critical look. In K. Ericsson & J. Smith (Eds.) *Toward a general understanding of*

- expertise: Prospects and limits* (pp. 93-125). New York: Cambridge University Press.
- Patton, M. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(5), 1189-1208.
- Pedin-McAlpine, C. (2000). Early recognition of patient problems: A hermeneutic journey into understanding expert thinking in nursing. *Scholarly Inquiry for Nursing Practice: An International Journal, 14*, 191-222.
- Polit, D. & Tatano-Beck, C. (2004) *Nursing Research: Principles and methods, 7<sup>th</sup> ed.* Philadelphia, PA: Lippincott, Williams & Wilkens.
- Roberts, M. (1998). Tax accountants' judgment/decision-making research: A review and synthesis. *The Journal of the American Taxation Association, 20*(1), 78-121.
- Scardamalia, M. & Bereiter, C. (1991). Literate expertise. In K. Ericsson & J. Smith (Eds.) *Toward a general understanding of expertise: Prospects and limits* (pp. 172-194). New York: Cambridge University Press.
- Schön, D. (1987). *Educating the reflective practitioner : Toward a new design for teaching and learning in the professions.* San Francisco, CA: Jossey-Bass.
- Shanteau, J. (1992). Competence in experts: The role of task characteristics. *Organizational Behavior and Human Decision Processes. 53*, 252-266.
- Shanteau, J., Weiss, D., Thomas, R., & Pounds, J. (2002). Performance-based assessment of expertise: How to decide if someone is an expert or not. *European Journal of Operational Research, 136*, 253-263.

- Siegel, P., Blackwood, B., & Landy, S. (2010). Tax professional internships and subsequent professionals performance. *American Journal of Business Education*, 3(5). Pp. 51-59.
- Simms, L. (1981). The grounded theory approach in nursing research. *Nursing Research*, 30(6), 356-359.
- Stern, B. (2006). What does *brand* mean? *Journal of the Academy of Marketing Science*, 34, 216-233.
- Simon, H. and Chase, W. (1973). Skill in chess. *American Scholar*, 61, 394-403.
- Straszewski, J. (1988). Skilled memory and expert mental calculators. In M. Chi, M., R. Glaser, & M. Farr (Eds.). *The nature of expertise* (pp. 71-128). Hillsdale, NJ: Erlbaum.
- Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *The Academy of Management Review ARCHIVE*, 49(4), 633-642.
- Swanson, R. & Holton, E. (2009). *Foundations of human resource development* (2<sup>nd</sup> ed.). San Francisco: Berrett-Koehler.
- Torngren, G. & Montgomery, H. (2004). Worse than chance? Performance and confidence among professionals and laypeople in the stock market. *The Journal of Behavioral Finance*, 5, 148-153.
- Tracy, S. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research.” *Qualitative Inquiry*, 16, 837-851.

Training top 10 hall of fame (2011). *Training*. 48(1), 52-53.

Turner, B. (1983). The use of grounded theory for the qualitative analysis of organizational behaviour. *Journal of Management Studies*, 20, 333-348.

University of Illinois, College of Business, Department of Accountancy : Bachelor of Science in Accountancy. (2012) Retrieved January 23, 2012, from <http://www.business.illinois.edu/accountancy/programs/bs/>.

University of Minnesota, Carlson School of Management, Undergraduate program, management.(2012). Retrieved January 23, 2012, from <http://www.csom.umn.edu/undergraduate/academics/majors-minors/accounting.html>.

University of Texas at Austin, McCombs School of Business, Texas BBA Advisor: Accounting. (2012) Retrieved on January 23, 2012, from <http://www.mcombs.utexas.edu/BBA/Advising/Majors/Business/ACC.aspx>

University of Wisconsin at Madison, Wisconsin School of Business, Wisconsin BBA: Academics: accounting(2012). Retrieved on January 23, 2012, from <http://bus.wisc.edu/bba/academics/majors/accounting>.

Van der Hiejden, B. (2002). Individual career initiatives and their influence upon professional expertise development throughout the career. *International Journal of Training and Development*. 6, 54-79.

Vroom, V. (1964). *Work and motivation*. New York: John Willey & Sons, Inc.

## Appendix A Representative Email

**Question:** Would you be willing to participate in an interview as part of my PhD research?

Participation would involve a 60 (to possibly 90 minute) interview regarding your personal experience in becoming an expert.

**Background:** I am in the final stages of completing a PhD in Human Resource Development at the University of Minnesota. In my dissertation, I am exploring the process by which professionals develop expertise in tax accounting and I would like to interview you to understand how you became an expert tax accountant.

**Interview process:** I would like to speak with you about your experience in becoming a tax accounting expert. The interview should last between 60 to 90 minutes. We could conduct the interview using Skype or over the phone—whichever method you prefer.

**Confidentiality and Consent:** While I don't anticipate asking any personal information, I do have a protocol to ensure confidentiality. I will record and personally transcribe the interview. As I transcribe the interview, I will not include your name, geographic location or firm affiliation. Once I have transcribed your interview, I will delete the audio file. When I have completed the research process, I would be happy to submit the document for your review to make sure that your identity is not disclosed—and that I have captured your comments accurately.

Attached to this email is the University of Minnesota consent form. The consent form provides additional information about the process for ensuring confidentiality. For the type of research I am conducting, I do not need a signed consent form; however, I do want you to be fully informed about your rights (and my responsibilities).

**Scheduling a phone call:** Would you have any time to schedule an interview the week of:

July 30 – August 4

August 20 – August 24

August 27 – August 31

Please let me know a time/date that might work in your calendar.

Sincerely,  
Diane

## **Appendix B Consent Form**

### **Ph. D. Dissertation What is the process of developing expertise in tax accounting?**

You are invited to participate in a research study on the process of developing expertise in tax accounting. You were selected as a possible participant because you have been identified as an expert tax accountant. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Diane Kuhlmann, PhD Candidate, Human Resource Development, University of Minnesota.

### **Background Information**

The purpose of this study is to understand the process of developing expertise in tax accounting.

### **Procedures:**

If you agree to be in this study, I would ask you to do the following things: Participate in a 60 to 90 minute interview and possibly a follow-up interview. Based on your preference, the interview will either be conducted in person, on the phone, or over Skype. The interview will be recorded; however, I will immediately transcribe the interview, remove personal identifying information in the transcript and delete the recording.

### **Risks and Benefits of being in the Study:**

I am not aware of any risks to you in participating in the study.

The benefit of the study is to better understand how tax expertise is developed so that we can foster expertise in our novice professionals.

### **Compensation:**

There is no compensation associated with participating in this study.

### **Confidentiality:**

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. Study

data will be encrypted according to current University policy for protection of confidentiality. I will be the only person with access to the recordings. I will immediately transcribe the recording. Your file will be identified by a number rather than your name. Once the transcription is complete, the recording will be deleted.

**Voluntary Nature of the Study:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**Contacts and Questions:**

The researcher conducting this study is Diane Kuhlmann. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact Diane Kuhlmann at (952)239-2294 or [diane.kuhlmann@gmail.com](mailto:diane.kuhlmann@gmail.com). You may also contact my Ph.D. advisors, Dr. Catherine Twohig, [two0001@umn.edu](mailto:two0001@umn.edu) or Alexandre Ardichvili, [ardic001@umn.edu](mailto:ardic001@umn.edu).

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

*This document is for your record.*

### **Appendix C Interview Questions**

Background: The data will be collected from a long interview. In a long interview, the researcher creates an environment in which the participant feels comfortable sharing his/her experience. The long interview will not have a long list of predetermined questions; instead, the researcher will have questions to begin the discussion and guide the discussion. Many of the questions will be determined during the interview as the researcher clarifies statements to ensure understanding, asks for more detailed information, or explores an unexpected topic.

The following is the interview guide:

- Create context: The purpose of this research is to explore the process of how expertise in tax accounting is developed. I have asked to speak with you because you have been identified as a tax accounting expert—and I want to understand how you developed your expertise. I am interested in your unique story.
- Initial question (education): How did you decide to study taxation? Did you start college thinking, “I want to be a tax accountant?”...or was tax accounting an interest that developed over time?
- Question regarding professional experience: Tell me about your first professional job in accounting.
  - Did you specifically decide to specialize in tax rather than audit or accounting?

- Often, the purpose of your first job is figuring out what you don't want to do as much as what you want to do. What led you to believe that you wanted to be a tax accountant?
- When you started your first job, can you remember how you felt about your level of expertise? Did you feel well prepared to enter the field?
- Can you tell me about your progression in your job? For example, did you start as a staff accountant—then progress to senior accountant on to becoming a partner...or did you have a different experience? Did you stay with a single firm or did you work in more than one firm?
- What are some things that helped your progress to the next level?
  - Did your firm have training programs?
  - Did you have the opportunity to work on interesting assignments?
  - Was there anyone who helped guide you early in your career?
- As you think about your career, are there turning points, key events, important people who helped you become successful?
- What hurdles or difficulties did you have to overcome to advance in your career?
- Can you tell me about your work schedule early in your career? Did you work especially long hours? Did you perceive that you were working harder than your colleagues?
- How does your work schedule today compare to your schedule earlier in your career?

- What were your leisure activities early in your career? Did your leisure activities change as you moved through your career?
- As I indicated at the beginning of the interview, you were selected as a participant because you were identified as an expert in tax accounting.
  - Do you consider yourself an expert?
  - Was there a point in your career where you recognized that you had developed expertise? Can you tell me about an incident that helped you realize that you were an expert?
- If someone asked you for advice on how to become an expert in tax accounting, what would you tell him/her?
- Is there anything else you would like to tell me about how you became an expert?

### Appendix D Constant Comparative Spreadsheet

Line #	Name	Open code 1/2/13	Code 2: 1/3/13	Data
131	Frank	compliance	compliance	<p>And if you're doing compliance, then you're just toast in my opinion. Because I think compliance will be phased out in the next 4 or 5 years. You're not going to be having people inputting tax returns in the future—that will just be an automated process. It will be the same thing we saw in Detroit. It went from people to robots. People are supervising robots in the construction of an automobile and that tax return is much easier to automate. You've seen it with the outsourcing side</p> <p>Absolutely, but I have a lot of respect for compliance. Because through compliance, you can really find a lot of tax planning ideas that you can implement. If you don't know the compliance you're really going to be missing a key part of what need to do from the tax point of view. Because to me, compliance is really key to everything. You've got to know where all of your ideas are going to end up—where are they going to show up for the IRS. And you had to know the company, you have to know the compliance numbers. Otherwise, you don't know the company. So I got very involved with compliance, I was doing a lot of that.</p>
46	Pete	compliance	compliance	<p>But when I first went to CPA X it wasn't a focus in corporate and M&amp;A. It was a focus in anything that wasn't compliance</p>
39	Josh	not compliance	compliance	<p>Why are certain what kind of planning opportunities you could have. I always knew I had a focus beyond compliance.</p>
42	Josh	not compliance	compliance	<p>That was the thing that was the most like being a lawyer per se—the least like being this compliance person.</p>
46	Josh	not compliance	compliance	