

Original  
scientific paper

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## *Expertise in the Workplace: The Lifelong Pursuit of Eminence in Professional Practice*


**Summary:** *The central aim of the paper is to set forth the principles for achieving professional eminence in workplace settings by merging the literatures of psychology, adult learning, and neuroscience. In this manner, our paper is conceptual in nature, not experimental. The extant literatures highlight that the path to eminence in a domain is characterized by a combination of the ability to overcome adversity (i.e. resilience and grit), extensive and deliberate practice, psychosocial skill development, and an amount of innate talent. We first unpack each of these dimensions and expound upon their psychological and cognitive underpinnings. We explain the principles in the context of lifelong skill development in workplace settings. A key benefit of this paper is the consideration of and recommendations for human resource development and talent development professional practice. We conclude with implications for research.*

**Keywords:** *expertise, eminence, human resource development, talent development*

The development of expertise is a dynamic and fluid process and is therefore best represented as a complex continuum (Martinez et al., 2025). An individual's place on that continuum reflects their level of expertise which is in development at a given moment. In this paper, we consider the development of expertise as a progression, from a stage of *novice* to *competent* to *expert* to *eminent*. While expert status denotes a recognized level of proficiency achieved through experience and training, eminence signifies

an even higher level of accomplishment characterized by exceptional skill, creativity, and significant impact. All eminent individuals are experts, but not all experts achieve eminence, as expert status does not inherently imply the same level of contribution as eminence (Uygun-Tunç & Tunç, 2023). The literature is clear that the attainment of eminent status is rare and therefore under-researched compared to the work done on the levels of novice, competent, and expert (Eagly & Miller, 2016).

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## The Expertise Continuum

Achieving professional eminence is not easy. In every domain, the path to eminence is long and grueling, requiring individuals to foster the necessary KSAs (knowledge, skills, and abilities) to reach mastery. For this reason, the development of eminence is characterized by four developmental stages (Figure 1) that serve as “training grounds” for individuals to cultivate the practices and beliefs needed to develop the desired eminence that so few attain.

Figure 1. Expertise Continuum

### Novice ↔ Competent ↔ Expert ↔ Eminent

Note: Figure 1 is derived from synthesizing the work of Ericsson, 2016, Olszewski-Kubilius et al., 2016a & 2016b, and Chi, 2006.

#### Novice

Regardless of one's relative position on the continuum, all performers were once novices. A novice is “relatively new to a particular field or domain. As such, their KSAs (knowledge, skills and abilities) are underdeveloped” (Martinez, 2023, p.20). It is in this early stage that novices must develop the appropriate mental models they need to foster their expertise and, ultimately, eminence (Martinez et al., 2025). Jonassen and Henning (1999) defined mental models as the internal and operational representations humans develop in their interactions with systems in the outside world. They further explained that mental models and “the knowledge that they reflect exist not only in the heads of learners but also in the activity structures engaged in by learners, the identities and social relationships of the learners, the discourse they generate as problem solvers, and the artifacts employed in those processes,” (Jonassen & Henning, 1999, p. 433). Therefore, it is critical that novices develop mental models that enhance their confidence and tackle limiting beliefs that may otherwise hinder their development. Self-efficacy refers to an individual's belief in their ability to achieve goals or accomplish tasks, and research

indicates that in the early stages of skill acquisition, self-efficacy was found to be the most important focus (Mitchell et al., 1994). Similarly, having a growth mindset and eliminating limiting viewpoints about one's ability to learn is vital in reaching eminence. Research has found that individuals with a growth mindset “believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates an affinity for learning and a resilience that is essential for great accomplishment” (Dweck, 2006, p. 7). Additionally, in terms of developing professional expertise in workplace settings, it is crucial that organizations invest in the development of their novice or entry-level employees. Salas and Rosen (2009) argued that organizations should provide support for novices by implementing opportunities for deliberate practice, feedback, training, and mentorship, each of which are vital in cultivating expertise. Salas and Rosen (2009) also found that organizations benefit from investing in their novice staff as their research showed that doing so leads to improved performance, higher retention, and stronger problem-solving capabilities. Overall, the path towards eminence demands that organizations build workplace environments that are conducive to expertise development and that novices approach learning with confidence and a growth mindset in their journey towards achieving eminence.

#### Competence

The next stage on the path towards eminence is *competence*. When individuals reach competence in their domain this means that they have a sound grasp of “the basic principles and practices of their domain and can apply them in routine situations,” (Martinez, 2023, p.20). Competence is a critical stage in the progression towards expert status and, ultimately, eminence. In this developmental phase it is vital that individuals work with a coach to strengthen their foundational KSAs. Research shows that working with a coach or mentor is vital in developing expertise because “mentors hold the

key novices need to unlock their professional expertise,” (Barnett, 1995, p. 54). Moreover, in order to strengthen their skills, individuals must engage in deliberate practice. Deliberate practice “is a highly structured activity, the explicit goal of which is to improve performance. Specific tasks are invented to overcome weaknesses, and performance is carefully monitored to provide cues for ways to improve it further,” (Ericsson et al., 1993, p. 368). Therefore, working with a coach who pushes individuals to participate in deliberate practice is critical in helping them progress from competence to expertise.

Additionally, this stage aligns with Vygotsky’s *Zone of Proximal Development* theory, which states that learning occurs most efficiently when tasks are slightly beyond the learner’s current level of knowledge (Vygotsky, 1978). This illustrates that in order to foster the development of their expertise and eventual eminence, it is important for individuals to engage in tasks that are at a level of desirable difficulty. Bjork and Bjork (2011) found that desirable difficulties enhance learning conditions by incorporating challenges and help promote “trigger encoding and retrieval processes that support learning, comprehension, and remembering” (p. 58). It is therefore essential that individuals possessing competence in their domain are supported to reach eminence through having access to a coach, engaging in deliberate practice, and partaking in tasks that challenge and push them outside of their comfort zone.

### **Expert**

The next stage in the path to eminence is being an *expert*. Individuals who are experts have reached “high levels of competence. They can handle complex and novel situations with ease, often relying on a blend of intuition (sometimes called a “hunch”) and analytical thinking (sustained, systematic thought)” (Martinez, 2023, p. 20). As stated above, in order to facilitate the development of expertise, individuals must engage in deliberate practice, have access to a coach, and challenge them-

selves with learning conditions that are difficult. In addition, feedback and reflection are also critical in this stage. Research shows that “In the absence of adequate feedback, efficient learning is impossible and improvement only minimal even for highly motivated subjects” (Ericsson, Krampe, & Tesch-Römer, 1993, p. 367). This demonstrates that the quality of the feedback experts receive can either help or hinder their progress. Thus, feedback from coaches should provide learners with “the information they need so they can understand where they are in their learning and what to do next - the cognitive factor” (Brookhart, 2017, p. 2). Likewise, engaging in reflection is also vital to expertise development. Reflection “is viewed as an information-processing strategy which not only provides opportunities for individuals to create mental networks, but also to develop more complex interconnections and depth of thinking characteristic of expert thinkers” (Barnett, 1995, p. 49). Experts should reflect on the feedback they receive and should use that to guide their learning. Finally, experts should continue to nurture their development by engaging in the practices that made them experts in the first place. Through continued deliberate practice, ongoing reflection, coaching, and feedback, experts can accelerate their development and achieve eminence.

### **Eminence**

The final stage of mastery and peak of expertise is *eminence*. Eminence represents the highest level of achievement (i.e. the peak of a career) across the expertise continuum, reserved for the most exceptional individuals in a domain (Subotnik et al., 2017; Albert, 1990). However, on the continuum of expert performance (Figure 1), expert and eminent performers are often mistakenly placed in the same category. This creates confusion because eminent individuals have distinct characteristics from experts, and thus separating the two stages is necessary because there will be less variation within the populations (Baker et al. 2019). To be clear, the sta-

tus of an expert is a precursor to eminence (Subotnik et al., 2017; Worrell et al., 2021).

Eminent individuals are leaders, pioneers, and change-makers in their fields. They create outstanding art, advance science, display impressive courage and commitment, create new pathways, and push the limits of human achievement (Subotnik and Rickoff, 2009). Eminence is characterized by creative productivity, significant contributions to a domain, and sustained impact over time (Olszewski-Kubilius et al., 2016a). Eminent performers often mentor and promote the next generation of eminent individuals. For example, a study of eminent performers showed that Nobel laureates are frequently mentored by previous Nobel laureates (Subotnik and Rickoff, 2009). Another study of scientists in STEM fields showed that individuals who are mentored by prizewinning mentors are three to five times more likely to become prizewinners themselves (Ma et al., 2020).

Additionally, eminent individuals have particular psychological characteristics and face unique challenges in their pursuit of excellence. They often come from emotionally difficult childhood environments with high expectations and stress (Subotnik and Rickoff, 2009). In a study of high-performance athletes, researchers found that Olympic medalists (eminent individuals) were associated with an intense commitment to their performance, possessing such psychological traits as obsessiveness, perfectionism, and ruthlessness (Baker et al., 2019). In the case of elite athletics, extreme training and dieting has been found in olympians (Baker et al., 2019). Ultimately, achieving the highest levels of performance comes at a cost, regardless of field or domain.

## **How to Develop Eminence**

### ***Grit***

The literature from psychology, adult learning, and neuroscience suggests that individuals who attain eminence consistently exhibit high levels of

determination and persistence, especially in the face of challenges and failures. This committed perseverance towards long-term goals is referred to as *grit*, and is a stronger predictor of success than intelligence or innate talent (Duckworth et al., 2007; Musso et al., 2019). Research shows that it is this combination of relentless passion and perseverance—that makes high achievers special (Duckworth, 2016). Other studies show that high levels of grit are associated with eminence in academic performance (Lam & Zhou, 2019), nursing (Cho & Kim, 2022), the military (Musso et al., 2019), and general career success (Lechner et al., 2019). Grit is also a core tenet of having a growth mindset and as mentioned earlier, it is vital for individuals to have a growth mindset on their path to mastery. As Dweck (2012) stated, “People may start with different temperaments and different aptitudes, but it is clear that experience, training, and personal effort take them the rest of the way,” (p. 11).

### ***Access To and Support from Mentors with Eminent Mental Models***

Research consistently demonstrates that expert guidance and mentorship are associated with enhanced career outcomes for mentees. Allen et al. (2004) conducted a meta-analysis which revealed that protégés who engage in mentoring relationships experience various career benefits, including higher salaries, promotions, and overall career satisfaction. In the context of higher education, Stamm and Buddeberg-Fischer found that mentorship during post-graduate training positively influences doctors’ career success, emphasizing the importance of skill development and career support for the achievement of eminence (Stamm & Buddeberg-Fischer, 2011). Mentors often provide critical feedback, share their experiences, and offer insights that help mentees navigate complex professional landscapes. For faculty, effective mentorship has been linked to increased publication rates and grant acquisition, which are key indicators of academic eminence (Gupta, 2025).

Another significant aspect of the mentor-mentee relationship is the networking opportunities it provides. Mentors often have established connections within their fields, which can be invaluable for mentees seeking to advance their careers. For example, Chaiyachati et al. (2019) found that research-intensive fellowships connect participants with mentors in the academic research community, facilitating access to resources and opportunities that can lead to career advancement. This networking dynamic is crucial for achieving eminence, as many high-level positions and recognitions are often filled through referrals and personal connections. Additionally, Rogova et al. (2022) highlighted how mentoring relationships foster a supportive environment that encourages underrepresented scholars to persist in their research careers. Such support not only aids in retention but also enhances the likelihood of achieving eminence through sustained engagement in impactful work.

The key question to consider is, “*Why is this so?*” The answer is simple: this phenomenon exists because eminent individuals possess the most robust, effective mental models; therefore, drawing upon such eminent mental models allows the guidance and mentorship they provide to streamline the learning of the mentee. Eminent performers possess highly abstract, semantically bound, and hierarchically structured mental models (Doane et al., 1989; Toker & Moseley, 2013). Such mental models contribute to their superior problem-solving abilities, including creative thinking and troubleshooting (Mumford et al., 2012; Johnson, 1988). For complex work, experience over time allows professionals to develop rich mental models that enhance their decision-making and performance (Mukherjee et al., 2005).

### ***Access to Strong Feedback***

Closely related to the mentorship of individuals that possess eminent mental models, is the important role of strong feedback. The research on strong feedback is clear: strong feedback consists of

a clear explanation of the (1) desired state, (2) current state, and (3) the path for getting from the current to the desired (i.e. specific, actionable steps). Research has shown that becoming aware of the difference between these two states (desired state vs. current state) engages the receiver’s brain systems that drive attention, effort, and persistence in pursuit of a goal. Strong feedback is also immediate, as research has shown that feedback that is both immediate and clear is of the most benefit to the recipient (Wisniewski et al., 2020). Research has also found that the depth and breadth of the feedback changes as an individual advances from novice to competent to expert to eminence. In other words, the feedback that is of most help for a novice will be different than that of most help for a competent person, which will be different than that of most help for an expert, and so forth.

### ***Deliberate Practice***

Not all practice leads to improved performance, nor does all experience lead to improved performance. For instance, research has shown that for many physician specialties, performance actually *worsens* over time (Choudhry, 2005; Lesgold, 2014; Pusic et al., 2011). So it is imperative that any practice be of the right quality; deliberate practice is that answer (Ericsson, 2016).

Deliberate practice is:

- 1) purposeful, requiring the individual’s focused attention.
- 2) requires setting highly-specific, and receiving the strong feedback described above.
- 3) is most effective when dependent on eminent mental representations.

Research on eminent performers has found that long-term training results in changes in those parts of the brain that are relevant to the particular skill being developed (Grape et al., 2002; Kawabata, 2007; Lehmann & Ericsson, 1988). And this pattern is consistent across domains and skill types: delib-



erate practice leads to changes in the regions of the brain that are provoked by the practice (Ericsson & Faivre, 1988). In a process known as *neuroplasticity*, the brain adapts to the challenge of deliberate practice by rewiring itself in ways that increase its ability to carry out the specific functions required by the challenge.

### ***Innate Talent***

Innate talent refers to the natural abilities or predispositions that an individual possesses. Evidence suggests that genetic factors can influence the rate of skill acquisition and performance magnitude (Simonton, 2007), and that individual differences in cognitive abilities, such as working memory capacity, play a role in developing expertise (Kulasegaram et al., 2013). For instance, Hambrick et al. (2018) argued for a model of eminence that incorporates the combination of innate traits and experiential factors. They particularly argued that while innate talent may provide a foundation for skill development, it is not the sole determinant of expertise or eminence. This perspective aligns with the notion that certain individuals may have predispositions that facilitate their learning and performance in specific areas, such as music, sports, or academics.

Research in elite athletics further indicates that innate talent can influence the trajectory of expertise acquisition. For example, Baker et al. (2020) highlighted that while innate abilities are important, the context and environment also play crucial roles in shaping expertise. They note that certain sports may require specific perceptual-cognitive skills that are influenced by innate talent, but the development of these skills is also contingent on practice and experience.

The concept of *critical periods* in talent development further illustrates the relationship between innate talent and expertise. Research by Staff et al. (2021) suggested that certain innate talents may be more easily developed during specific developmental windows, which can accelerate the acquisition of

expertise. This highlights the importance of recognizing and nurturing innate talents early in life to maximize the potential for expertise.

However, the identification of innate talent can be challenging, as it often requires a nuanced understanding of individual differences and contextual factors (Lascu et al., 2021; Connor et al., 2020). As noted by Davids and Araújo (2019), the relationship between talent, skill, and expertise is increasingly seen as functional, emphasizing the interaction between the individual and their performance environment over time. This perspective suggests that while innate talent may provide a starting point, the development of expertise is a dynamic process influenced by various factors, including practice, feedback, and environmental support.

## **Implications and Recommendations**

### ***Advancing Research & Theory***

Although eminent individuals are clearly valuable to society, the process of achieving eminence has not been extensively studied (Worrell et al., 2018). Therefore, researching eminence helps broaden the understanding of the top range of performance and the unique characteristics of top performers. Having a better understanding of the eminent level of performance will allow researchers to make recommendations on how to support eminent individuals and mitigate consequences of their efforts. Fortunately, each preceding developmental stage equips individuals with the tools needed to attain an eminent level of mastery.

### ***Application & Implementation***

Given the principles and patterns discussed above, to optimize the development of eminence within their ranks, human resource development (HRD) professionals would be wise to first consider the level of *grit* of candidates as a formal part of the selection process. This could take the form of a for-

mal measurement instrument or through a mixed approach that includes questions to a candidate regarding their levels of perseverance and resilience in their past work. Once a candidate is hired, HRD professionals should seek to provide (1) access to the mental models of eminent performers, (2) access to strong feedback, (3) opportunities for deliberate practice.

To provide access to eminent mental models, HRD professionals should ensure that learning experiences rely on the mental representations of the eminent/top performers, and not lesser mental representations of mediocre performers. They can also seek those who have done an elite job themselves, or even scholars who have researched top performance. To accomplish this they should resist the pitfall of settling for convenience, like LinkedIn trends. For example, they might procure books or articles that are grounded in science, research, and eminent performances (Martinez, 2023). Additionally, they can curate a list of podcasts or videos that provide information from eminent performers.

Providing access to strong feedback requires providing learners with an immediate and clear articulation of the (1) desired state, (2) current state, and (3) the path for how to get from current to desired. HRD professionals should ensure that the learner is receiving strong, timely feedback consistently throughout their development (Martin-

ez, 2023). They might also consider this question: “What am I doing to make their access to strong, timely feedback possible?”

Providing opportunities for purposeful, deliberate practice, HRD professionals should first identify the specific skill that is to be developed. The skill should then be broken down into its most fundamental, basic parts. One part should be practiced until mastery is achieved before moving onto the next. As a part of the practice, HRD professionals should target a level of difficulty that challenges the learner to leave their comfort zone. HRD professionals should identify the skills that need to be improved before providing resources or opportunities for purposeful, deliberate practice.

## **Conclusion**

While the path to professional eminence is rarely attained, each prior developmental stage (i.e., novice, competent, and expert) is a training ground and an opportunity for individuals to build the practices and beliefs needed to achieve mastery. With unwavering persistence and belief in one’s own ability to learn and grow, coupled with support from mentors, and consistent effort, and practice, individuals can become eminent changemakers who transform their field and set a new standard for excellence.

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## СТРУЧНОСТ НА РАДНОМ МЕСТУ: ЦЕЛОЖИВОТНО СТРЕМЉЕЊЕ КА ИЗУЗЕТНОСТИ У ПРОФЕСИОНАЛНОЈ ПРАКСИ

У овом проширеном резимеу наводимо примарни циљ истраживања, значај и контекст проблема, а пошто прецизно описујемо методолошки приступ коришћен у истраживању и најзначајније резултате и закључке, као и одређене импликације за педагошку праксу.

У постојећој литератури налашава се да на поштивање изузетности у одређеној области утиче комбинација следећих фактора: способност да се превазиђу невоље (отпорност и одважност), обимна и фокусирана пракса, развијање психосоцијалних вештина и урођени таленат.

Будући да се изузетност у одређеној области ретко постоји, она је недовољно изражен феномен у академским круговима у поређењу са истраживањима везаним за нивое почетака, компетентне особе и стручњака. Проучавање изузетности јуно је изазов, јервенствено збој субјективне природе самој концепта и различитих критеријума који се користе за његово дефинисање и евалуацију. Изузетност се често дефинише комбинацијом квантитативних мера, као што су број цитата и награда, и квалитативних фактора, као што су значај и утицај унутар одређене дисциплине, чиме се оштрава устојављање параметара који би се доследно примењивали у различитим областима. Управо збој тога, недоследност у одређивању појма изузетности чини компаративну анализу сложеном и често неодоарајућом.

Проблем који додато компликује проучавање изузетности јесте ослањање на историјске податке и њихово тумачење. Историјске анализе еминентних појединаца често откривају предрасуде у погледу тога које врсте достигнућа се уважавају и величају. Ово ограничење не само да утиче на генерализацију налаза већ и јача постојеће хијерархије и постојеће доприносе из различитих културних средина. Стога, иако би статус еминентној стручњака могао да сујерши признање од стране колега, прави утицај и достигнућа моју бити прикривени или постојано неирани у студијама које се ослањају искључиво на конвенционалне мере.

У раду истражишемо литературу из психологије, андралогије и неуронауке да бисмо поставили принципе за поштивање изузетности на радном месту. Наша синтеза је резултат анализирања научних радова и текстова који се даве истраживањем развоја стручности. Анализирали смо следеће теме: стручност, развој вештина, развијање талента.

Обука за поштивање изузетности захтева вишеструки приступ који истражише развој талента, психометријске процене, проактивне образовне праксе и неовање

психосоцијалних вештина. Осим урођеног талента, изузетности захтева и стипендијски оквир за развој током целој живој појединца. Централна тема у посматрању изузетности је препознавање различитих фаза у развоју талента. Да би постао изузетан у одређеној области, појединац мора да буде изнад просека учествовања у нечему и саме стипендији. То захтева фазе ригорозне праксе и трајног ангажовања у оквиру одређеног поља, чиме се подстиичу иновативни доприноси појединца од којих друштво може да има велику корист.

У закључку, обука за изузетности укључује интегрисану стипендију која обухвата развој вештина, коришћење ресурса и култивацију психосоцијалних компетенција. Неповањем окружења усредсређеног на стални раст и иновације, уз истовремено наглашавање личних карактеристика и образовног калкулуса, појединци могу да се позиционирају на путевима који воде ка изузетности.

**Кључне речи:** стипендија, изузетности, развој људских ресурса, развој талента