Book #14. Peak by Anders Ericsson and Robert Pool (Personal Mastery)


Length: 336 pages, or 10 hours and 40 mins on Audible.

Short book summary

Discover why there is no such thing as child prodigies, instead gifted performers have had extensive deliberate practice. Learn how everyone can make dramatic performance improvements in any field by continually stretching themselves across all the component parts of a discipline individually and together. Key insights:

1. Practice can be naïve (simple repetition), purposeful (some structure), or deliberate (continually at the edge of competence across all the component parts)
2. Make quick progress by measuring performance in specific skills and receiving rapid feedback
3. Training for skills is much more important than knowledge (knowledge lacks real-world use)
4. It is a myth that expert performance takes 10,000 hours – it can be more or less
5. There is no such thing as a ‘prodigy’ – no not even Mozart or Michael Jordan
6. Try a different approach to progress past plateaus
7. Study the best performers in novel fields to understand how they excel
8. Genetics do matter, but everyone can achieve dramatic improvements
9. Beware of limiting language about yourself (I can’t do it), or others (Johnny isn’t good at math)
10. Success follows effort, so find innovative ways to maintain motivation so you can practice (like joining groups)

Book details


Length: 336 pages, or 10 hours and 40 mins on Audible

Buy the book (USA): Amazon (book, Kindle, Audible)

Peak Summary

Key insight 1: Practice. From naïve, to purposeful, to deliberate practice

How often have we heard commentators call an elite athlete, musician, academic, or businessman a ‘natural’ or a ‘prodigy’? And in doing so it reinforces the notion that while practice matters, other intangible factors determine a person’s success. Peak thoroughly debunks this view point and illuminates the way to excellence based on deliberate practice.

In Peak the authors talks in some detail about Steve Faloon, an undergraduate student he hired to conduct a study into our ability to memorize number sequences. At the time the prevailing wisdom was that recalling seven digit numbers consistently, and no more than 10 digits was about the limits of human performance. After more than 200 training sessions over two years Steve was able to recall 82 random numbers provided at one second intervals. 82!! Amazing!!

The journey from average to amazing involved focused training, mental models, scoring systems, significant motivation, immediate reward, and a range of other factors. In this research with Steve, and related research into a range of expert performers, Ericsson was able to define deliberate practice. To understand deliberate practice, let’s consider it alongside its stablemates in naïve practice, and purposeful practice.

1. Naïve practice – day-to-day competence. This can be summarized as ‘just do more’. Two hours per day, 100 golf puts, or 10 chess games per day; or as Malcom Gladwell said in his book Outliers, 10,000 hours of practice. This is training with simple repetition. Repetition without structure or challenging targets won’t make you better at something any more than driving to work every day won’t make you a Formula 1 driver. Since you’re not refining your technique, your entrenching your current level of performance. And for many tasks this is just fine. If you’re a professional musician, you probably don’t need to strive to become a master chef, maths genius, or race car driver. But if you’re looking to become a master in one or two areas of your life naïve practice is not enough. More from Ericsson:

   “Once a person reaches that level of ‘acceptable’ performance and automaticity, the additional years of ‘practice’ don’t lead to improvement. If anything, the doctor, teacher, or driver who’s been at it for twenty years is likely to be a bit worse than the one who’s been doing it for only five; and the reason is that these automated abilities gradually deteriorate in the absence of deliberate efforts to improve.”

2. Purposeful practice – skilled performer. This way of practice has set goals, defined structure to progress against, and timely feedback from coaches. Achieving a highly skilled standard with purposeful practice is possible with motivation and the required time commitment. Training according to a defined process like a specialist music, chess, science, or academic program is key. As summarized above, a skilled trainer or coach who can identify strengths and weaknesses, provide timely feedback, and assign tailored practice for homework is key. However, for excellence, more is required. More from Ericsson:

   “So here we have purposeful practice in a nutshell: Get outside your comfort zone but do it in a focused way, with clear goals, a plan for reaching those goals, and a way to monitor your progress. Oh, and figure out a way to maintain your motivation.”

3. Deliberate practice – champions only. It is deliberate practice that produces our champions and what we think of as prodigies and geniuses. The authors note several principles to deliberate practice as summarized below:

   • A teacher who can stretch you, provide timely feedback, set homework is essential
   • You may need to change teachers as you develop your skills
   • Training near your current skills limit

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• Specific, well-defined goals overall, and for different skill items
• Be fully present during training – no ‘autopilot’
• Building and modifying mental representations for different skill items
• A detailed and sustained focus on improving specific skills
• Lots of performance data to measure and track progress

In the next key insight we’ll look at skills and measurement.

**Key insight 2: Progress by measuring performance in specific skills to achieve rapid feedback**

A key takeaway for me was excellence in any undertaking, was only possible at excellence in all the component skills that make up that undertaking. And at a greater level of detail than the ordinary practitioner would think relevant. Let’s do an example to illustrate. I’d like Eruditeable to be a hugely successful endeavor in which thousands of young adults build their wisdom and knowledge. So let’s build a map of skills I would need that master:

![Skills Map Diagram]

You can see from the diagram above there are 23 items organized into 5 categories. Each category could be broken down further – recording equipment inside Youtube content could be split into hardware, software, and studio. For all 23 items I should determine which entrepreneurs represent best practice in each area then find out how they are achieving excellent performance. I think you could agree that this is achievable, however it is a lot of work that will take several years. Welcome to Peak performance...

**Key insight 3: Train for skills first, knowledge second**

Ericsson discusses the difference between learning knowledge and learning skills. Learning knowledge while useful, struggles when it is needed to be applied in the real world in real time. Consider learning all the theory related to being a Formula 1 race car driver – mostly physics, but a bit of psychology as well perhaps. Will that help you become a better driver? At the margin a little bit, but not really. Your brain would become overwhelmed trying to apply all that knowledge at once; a ‘short-term memory’ problem as Ericsson calls it.
If instead you assimilate the knowledge and associated mental representations as part of deliberate skills training, then the individual skills/knowledge/mental models all become part of an interconnected group that is relevant to the specific activities being undertaken. In this sense academic knowledge about an activity becomes closely connected to the mental models of how the same activity works. Ericsson:

“You don’t build mental representations by thinking about something; you build them by trying to do something, failing, revising, and trying again, over and over. When you’re done, not only have you developed an effective mental representation for the skill you were developing, but you have also absorbed a great deal of information connected with that skill.”

Peak provides many examples of how having efficient and effective mental representations improves performance. Indeed, Ericsson advocates that education systems should aim to identify the mental representations expert performers use, and then recycle that knowledge back into training programs.

“A key fact about such mental representations is that they are very “domain specific,” that is, they apply only to the skill for which they were developed. We saw this with Steve Faloon: the mental representations he had devised to remember strings of digits did nothing to improve his memory for strings of letters. Similarly, a chess player’s mental representations will give him or her no advantage over others in tests involving general visuospatial abilities, and a diver’s mental representations will be useless for basketball. This explains a crucial fact about expert performance in general: there is no such thing as developing a general skill. You don’t train your memory; you train your memory for strings of digits or for collections of words or for people’s faces. You don’t train to become an athlete; you train to become a gymnast or a sprinter or a marathoner.”

Or if you follow the activities from key insight 2 above, you train to play the guitar, chess, or soccer. Or you train to become a salesman, surgeon, or management consultant. A final word from Ericsson:

“So everyone has and uses mental representations. What sets expert performers apart from everyone else is the quality and quantity of their mental representations. Through years of practice, they develop highly complex and sophisticated representations of the various situations they are likely to encounter in their fields—such as the vast number of arrangements of chess pieces that can appear during games. These representations allow them to make faster, more accurate decisions and respond more quickly and effectively in a given situation. This, more than anything else, explains the difference in performance between novices and experts.”

Other insights

4. Expert performance in 10,000 hours is wrong. Peak notes that the ‘10,000 hours to expert’ rule is wrong. Steve Faloon become the world’s best number memorizer in 200 hours. Research by cognitive psychologists, Gobet and Campitelli found that it took between 728 and 16,120 hours of chess practice to reach ‘master’ status. That’s a 22x difference in time taken. Your genetic makeup, when you start, and how you learn all combine to determine how many hours it would take you to master a specific craft.

5. There is no such thing as a ‘prodigy’. There is no such thing as a natural prodigy. Even children who display seemingly advanced abilities owe their skills to many hours of practice and effort. Mozart, for example, the quintessential child prodigy, was likely the product of a very early, immersive education in music as prescribed by his father, who was also a musician. Ericsson looks an many so-called prodigies and sees only evidence of deliberate practice.

6. Getting past performance plateaus. The best way to move past a performance plateau that is holding you back is to challenge your brain and body in a different way. As above, figure out the skill elements (at level 3 at
least) that are holding you back, and find a way to push yourself more on those specific elements. This will mean focusing your training on your specific weakness.

7. **Deliberate practice in new fields?** What if there are no established expert training programs? Ericsson suggests first identifying the expert performers, then figuring out what they do that makes them so good. This would involve identifying the skills to say level 3, and the associate performance standards and mental representations for each L3 skill. Then construct a training program to get to that level.

8. **Genetics matter – but everyone can improve.** Short people won’t make NBA players, this is obvious. In most instances however, everyone can improve. Short people can get better. There are some complex genetic factors that may influence a person’s ability for sustained deliberate practice – such as the ability to focus – and these in turn may limit improvement potential. But overall, everyone can improve.

9. **Beware limiting language.** Language that suggests a lack of natural skill in an activity is dangerous. Telling children they ‘can’t do maths’, or ‘can’t sing’ and that they should find something they ‘are good at’ is as wrong as it is dangerous. Children accomplished at any task are a result of hours of practice, pushy parents, and positive rewarding feedback. Children who stop trying at tasks are the result of the reverse.

10. **Maintaining motivation.** The key to motivation in becoming an expert is that it enables you to build hours of deliberate practice. To do this focus on reasons to continue (visualize your goals), leverage social groups to build extrinsic motivation, limit practice duration to avoid burnout, get enough sleep, measure your progress regularly to see signs of progress, get positive feedback, and build your identity around the skill you are acquiring.

**Why you should read this book if you’re under 30**

Being really good at something is both personally and (often) financially rewarding. So what do you want to be excellent at? Peak thoroughly debunks the notion of innate skill, and provides a detailed framework for what it takes to become best-in-class. This is especially important for young folks looking to excel in a chosen career field.

**Relationship to other Eruditeable books**

**#3 – Atomic Habits.** This book provides guidance on how to turn the expert/deliberate practice principles into permanent good habits.

**#7 – Emotional Agility.** This book will help you manage the inevitable emotional journey that will result from the pursuit of excellence in any field.

**#6 – The Magic of Thinking Big.** This book will help past limiting beliefs that are holding you back, and encourage you to find an interest for which you can apply the knowledge in Peak.

**#12 – Loserthink.** This book discusses the importance of systems to achieve goals, over goal statements themselves. It also discusses different ways of thinking about a problem which is helpful for overcoming performance plateaus.

**#13 – 12 Rules for Life.** This book provides psychological guidance on a range of issues related to personal success. In particular the principle to ‘compare yourself to who you were yesterday, not to who someone else is today.’

**#19 – Gifts Differing.** This book will help you realize more about your personality, and how this might influence your suitability to a desired career or interest field.
Book resources

About the author

K. Anders Ericsson PhD (1947 – 2020) was a Swedish psychologist and Professor of Psychology at Florida State University who is internationally recognized as a researcher in the psychological nature of expertise and human performance. Ericsson studied expert performance in domains such as medicine, music, chess, and sports, focusing exclusively on extended deliberate practice (e.g., high concentration practice beyond one's comfort zone) as a means of how expert performers acquire their superior performance. Critically, Ericsson's program of research served as a direct complement to other research that addresses cognitive ability, personality, interests, and other factors that help researchers understand and predict deliberate practice and expert performance. Ericsson has published numerous titles in the field learning and expertise including as co-author of The Cambridge Handbook of Expertise and Expert Performance, a volume released in 2006. He was also Fellow of the American Psychological Association.

Robert Pool PhD has combined his degrees in history, physics, and mathematics with his love of writing to become an acclaimed science writer. With the publishing of Peak Pool has become an internationally recognized author, speaker, consultant, and authority on Deliberate Practice – a key area of this book. His works have appeared in Discover, New Scientist, Science, Nature, Technology Review, Forbes ASAP, Think Research, The Washington Post, FSU Research in Review, MIT Technology Review, and other leading publications.

External links

https://findingmastery.net/anders-ericsson/

Youtube video

https://youtu.be/jzacdGzM1Zo

About Eruditeable (www.eruditeable.com)

Eruditeable aims to equip the next generation with the wisdom and knowledge needed to be the best possible individuals, citizens, partners, parents, managers, leaders, and politicians. In doing so it will improve the lives of the individuals, their friends and families; and the fortunes of their communities and nations.

We aim to do this by supplementing high school and college education with best-in-class books covering 24 topics organized in three areas as shown in the table below. By reading all 24 books before you turn 30, you will dramatically improve the quality of your life. Check out the books by clicking the links in the table below.
### Understanding society
1. World history
2. World progress
3. Philosophy
4. Morality
5. Economics
6. Politics
7. Logical thinking

### Personal success
1. Pursuit of happiness
2. Habit formation
3. Life planning
4. Personal finances
5. Thinking big!
6. Emotionality
7. Personality
8. Etiquette
9. Achieving excellence
10. Intimate relationships
11. Success principles

### Professional success
1. Leadership
2. Entrepreneurship
3. Influence/marketing
4. Negotiation
5. Difficult conversations
6. Business management

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**Eruditeable, a definition:**

Adjective, describes a person who is capable of acquiring great knowledge through deliberate effort.