

PracticeMind

The Complete Practice Model

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PracticeMind: The Complete Practice Model

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Introduction

Over the past century, a tremendous amount of scientific research has explored the mysteries of how humans learn and develop mastery. Many of these studies investigating self-efficacy, metacognition, self-regulated learning, self-determined motivation, and deliberate practice have profoundly shaped the landscape of learning science in many fields. More recently, music cognition scholars have applied this information to their research into the most effective and efficient ways for music students to learn and master a musical instrument. While we are indebted to the work of many of these researchers, in many cases throughout the book, the scientific research presented serves to support our own understanding and experiences pertaining to practicing and performing a musical instrument. This book is a culmination of not just years of research but, just as importantly, decades of teaching and performing experience. In our quest to continually improve our teaching, we have sought out the latest research and findings in the study of expertise and performance throughout the fields of sports, music, and beyond.

In our opinion, prominent psychologist K. Anders Ericsson's landmark 1993 study "The Role of Deliberate Practice in the Acquisition of Expert Performance" stands as the most significant recent study on advanced music practice.¹ This study was followed by not only many supporting explorations but also popular books such as *The Talent Code* by Daniel Coyle, *Outliers* by Malcolm Gladwell, and *Peak* by Ericsson and Robert Pool. One important finding from Dr. Ericsson's research was that to become an expert in any field, such as sports, chess, or music, a great deal of difficult training is required. The 10,000-hour rule that Ericsson promoted immediately caught the attention of researchers and media around the world. Malcolm Gladwell's book *Outliers* further popularized the idea that 10,000 hours were required to become an expert in any field.

One often-overlooked aspect was that the training had to be done using the deliberate practice method. *Deliberate practice* was a term coined by Ericsson and consists of a goal-driven individual practice routine with guidance and feedback from a teacher or coach. This effortful practice, combined with years of high-quality and high-quantity practice time, consistently leads to high achievement. Ericsson dispelled the myth of "natural" ability in the musical domain and optimistically stated that with directed effort and instruction, high achievement is possible regardless of perceived innate talent. Many research studies over the years have supported Ericsson's claims. However, one extensive study done in 2014 by Brooke N. Macnamara, David Z. Hambrick, and Frederick L. Oswald suggests that other factors, such as ability, commitment, and opportunity, also play prominent roles.²

From our personal experience, we agree with the concepts presented in both the Ericsson model and the 2014 Macnamara study. In addition to a lot of quality practice, great inner and outer hearing and natural physical coordination for playing the instrument are also important factors. However, over the years, we have witnessed first-hand how the creation and cultivation of a great musician is also dependent on the determination and motivation of the individual player. We have seen students with great potential who took their skills for granted and failed to develop consistent work habits eventually become far surpassed by students who at first seemed less talented but were determined and consistent in their efforts. In the end, the students who persevered day in and day out ended up with the most success and consistency of performance. We strongly believe that many musical and mental characteristics useful to performers can be improved with hard work and a focused mindset.

1 Ericsson et al., "The Role of Deliberate Practice," 363–406.

2 Macnamara et al., "Deliberate Practice and Performance," <https://doi.org/10.1037/0033-295X.100.3.363>.

The scientific information included in *PracticeMind* is only present if it meets our criteria of supporting a technique or method that we have found effective in our own practice and teaching. One learning model, created by Arielle Bonneville-Roussy and Thérèse Bouffard in 2014, combines much of the latest scientific knowledge of how to develop an expert performer. This model is the inspiration behind our Complete Practice Model, and it closely aligns with our own experience as teachers and performers. Their model is based on the idea that musical achievements are highly dependent on the balance between the following three factors:

1. Motivational profile
2. Formal and deliberate practice habits
3. Amount of practice time

The element of time is a crucial aspect of practice that has a strong influence on a player's ability to become an expert. We recommend three to four hours per day for serious high school and college musicians (and beyond). For international competitions and orchestral auditions, we have seen the best success when players increase their practice stamina to five or more hours per day leading up to the event. Regardless of the exact time spent practicing, it is crucial for players to maintain a focused and goal-oriented learning mindset—elements explored in the content of this book.

As stated earlier, we believe that many musical and mental characteristics useful to performers can be improved with hard work and a focused mindset. Embracing and enjoying the lifelong learning process in all its aspects is incredibly empowering and fulfilling. Each day provides opportunity for growth, and tomorrow is another chance to build on today. Take advantage of the time you have now, no matter how much or how little, and enjoy the process—and the book!

— Hans Jørgen Jensen and Oleksander Mycyk

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How to Use *PracticeMind*

For ease of use, this book is divided into four parts: Part 1, **The Practice Mind**, Part 2, **The Plan**, Part 3, **Implement** and Part 4, **Evaluate**. While the book can be approached in a nonlinear fashion, we recommend beginning with Part I, **The Practice Mind**. Reading this section first will help support the mental framework necessary to make full use of the practice skills presented in the remainder of the book. The organization of the remaining three parts—**Plan**, **Implement**, and **Evaluate**—closely follows the learning cycle that forms the core of our **Complete Practice Model**. After familiarizing yourself with the concepts in the first part of the book, one of the best ways to continue your journey through *PracticeMind* is to study the chapters you are interested in or address concepts you're struggling with.

Actively engage with each new concept, and try to personalize it to your own learning style. As you can see from the **Complete Practice Model** diagram on page xi, metacognition is at the top of the model and is the powerful thinking process behind your ability to observe, influence, control, and direct your actions.

Making *PracticeMind* a Regular Part of Your Daily Practice

In general, we recommend studying *PracticeMind* outside of your regular practice sessions as an additional small practice session. Continue with your normal practice routine, and if you want to change and add new ideas, proceed by adding them to your regular practice in small increments. As your understanding of the concepts grows, start using the ideas and specific exercises inside your practice session to help with whatever you are working on or having trouble with. For example, if you have a problem with setting goals, read **Chapter 9: Goal Setting** and start using it to set better and clearer goals. On the other hand, if your problem is planning your practice sessions, you can start using one of the methods from **Chapter 10: Complete Practice Planning** right away.

Simplifying the Process

Developing great practice habits takes time, and at first, certain practice topics may seem confusing. An important aspect of all practicing is to simplify as much as possible so you can get to the core of what you are trying to accomplish with minimal effort. The simple three-step process **plan–implement–evaluate** from the **Complete Practice Model** can be applied successfully to a wide range of practice and performance goals. When applied to smaller details, the three-step process only takes a few seconds; when applied to a larger goal, the process takes longer.

Changing Your Habits

Habits, good or bad, are not formed overnight. Allow time to process and integrate the new ideas you come across in the book. By focusing on one or two chapters at a time, you can make space for new ideas within your established practice routine.

A change of mindset requires deliberate work inside and outside the practice room. The more frequently and deeply you engage with the ideas presented in the book, the more you will notice lasting and impactful results. Small steps toward small changes will become big changes over time. Consistency of purpose will propel you forward and upward!

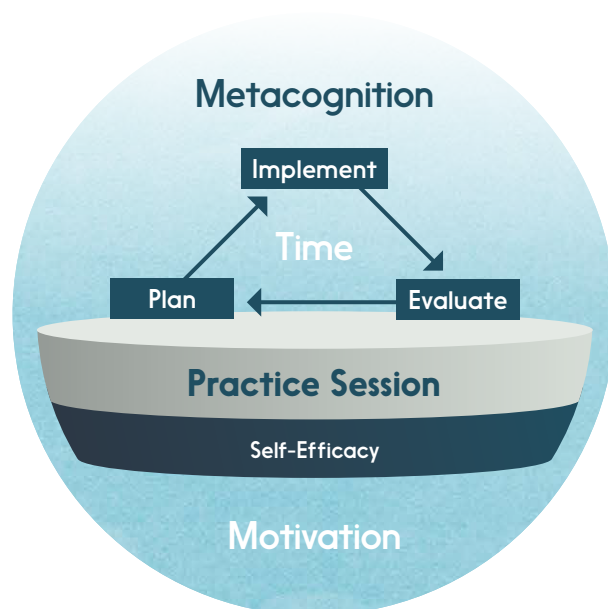


The Complete Practice Model

At the core of the **Complete Practice Model** are **Motivation** and **Self-Efficacy**, the inspirational driving forces that influence how people feel, think, and behave. **Metacognition** is the higher-order thinking skill behind all aspects of practicing and includes planning, organizing, implementing, and evaluating everything from the smallest details to large practice goals. **The Practice Session**

is the active core of the model where most growth and learning takes place by utilizing effective practice tools and strategies. The amount of practice **Time** that is used is a crucial element that is determined by individual goals and aspirations. Self-Efficacy interacts dynamically with Motivation, and together, these important traits support the ultimate effectiveness of the practice session.

Fig 1.1 The Complete Practice Model



How This Book Is Structured

As you work your way through the book, often return to this spherical model to remind yourself of the interconnectedness of each element within the sphere. The gradient at the bottom of the circle begins at Motivation with a dark blue and lightens to blend with the page at the top toward Metacognition, showing that practicing connects to and is influenced by the world beyond the practice room. Life is full of moments, relationships, and experiences to draw upon for inspiration and motivation. The Complete Practice Model is intimately connected to the world outside of music, and it expands with the lived experience and imagination that you bring to the pursuit of your goals and dreams.

Part 1: The Practice Mind

The first section of the book delves into topics related to the mental, motivational, and psychological aspects of learning. The ideas presented in these chapters are all connected to each other and together support a healthy and productive learning process. The later sections of *PracticeMind* are built upon the foundation of knowledge established in this first part of the book.

Chapter 1: The Practice Session

The practice session is the magical place where most improvement occurs. Practicing is an art form that must be developed over time; in this chapter, we explore a few samples of what constitutes an effective practice session. The Metacognitive Three-Stage Cyclic Process, plan–implement–evaluate, is an excellent organizational system that can be used repeatedly in the practice session. This process is scalable, from the smallest detail that takes just a few seconds to a larger goal such as planning a whole practice session or preparing for a recital.

Chapter 2: Metacognition

Metacognition is the powerful engine inside the Complete Practice Model that drives it forward and upward. It is involved in all aspects of practicing and is often identified as a model for “thinking about thinking.” For musicians, metacognitive knowledge and understanding is essential. It is a key component of practicing and includes planning, organizing, implementing, and evaluating everything from the smallest detail to larger practice goals. Visualization, problem solving, and creative and strategic thinking are also integral parts of practicing that are dependent on metacognition. Most musicians don’t think about it in these theoretical terms, but in general, the more advanced the player, the better they use metacognition in their practicing. Top musicians perform metacognitive steps and calculations in a few seconds, sometimes intuitively and without conscious awareness of the steps.

Chapter 3: Self-Efficacy

What you think and believe has a profound influence on what you can accomplish. Broadly defined, self-efficacy is your belief in your ability to achieve success. Together with motivation, self-efficacy influences behavior, thought, and actions. In this chapter, we reinforce that self-efficacy is not a fixed personality trait but that it can be developed over time and through experience. Psychologist Albert Bandura’s four sources of efficacy beliefs provide a framework for bringing awareness and positive change to your own beliefs.

Chapter 4: Motivation

Understanding the true nature of motivation is the most powerful tool for inspiring yourself and everybody around you. Motivation is the driving force behind all human creations; as such, it is the foundation of the Complete Practice Model. Study this chapter and think about how the two kinds of motivation, intrinsic (internal) and extrinsic (external), supplement and support each other. Self-Determination Theory is currently the most important theory in social psychology that helps explain motivation. It was developed by psychologists Richard Ryan and Edward Deci and grew out of their initial research on intrinsic motivation. We explain and apply this theory to practicing a musical instrument.

Chapter 5: The Musician’s Mindset

Becoming a successful musician and handling the inevitable ups and downs of a life in music require a strong mindset. In this chapter, we explore the different mindsets required for a musician, such as the competition mindset, the orchestra audition mindset, the performer’s mindset, and the practice mindset, as well as techniques for dealing with emotions when practicing.

Chapter 6: Patience and the Desire for Instant Gratification

Being patient is one of the mental qualities that you must either possess or develop to effectively practice and pursue long-term goals. In this chapter, we explain several scientific techniques and principles for how to become more patient and illustrate several examples through the lens of Sequence Framing.

Chapter 7: Psychomotor Learning

Psychomotor learning is the relationship between cognitive functions and physical movement. In the process of learning a psychomotor skill, you progress through a cognitive phase, an associative phase, and an autonomic phase. These phases chart the progression from conscious to unconscious control of a movement or skill. This chapter explores several ways to develop new techniques and refine previously developed skills.

Chapter 8: Intuition, Metacognition, and Creativity

Intuition is the ability to understand or decide something immediately, without the need for conscious reasoning. Unlike instinct, intuition has the potential to change with increased experiences and more knowledge. This powerful tool is developed to a high degree in many fields such as arts, science, and medicine, to name a few. Many of Albert Einstein's groundbreaking insights spawned from intuition and inspiration rather than logic or mathematics. Intuition is one of the most important abilities that musicians need to master and understand in their pursuit of better problem-solving skills and in-the-moment decision making in performance.

Part 2: The Plan

The second part of the book marks the first part of the metacognitive learning cycle. It focuses on setting goals and planning your practice.

Chapter 9: Goal Setting

Over the past twenty years, scientists across different fields have unveiled a tremendous amount of research regarding goal setting and motivation. Their findings highlight two key notions: (1) feedback is crucial to goal-setting success, and (2) goals pursued in conjunction with feedback are more effective than goals pursued by themselves. In this chapter, we will introduce you to three highly successful goal-setting methods. We recommend that you go through them individually, allowing enough time to integrate each one with your personal goals.

Chapter 10: Complete Practice Planning

Planning a practice schedule is a very different process from player to player. Many accomplished musicians have, through years of practice, harnessed the ability to implement a mental schedule for the day or week to achieve their musical goals. For musicians who struggle to keep track of time and goals, it may help to keep a written schedule either on paper or on-screen. This chapter introduces several different practice planning methods, including a powerful practice planning

tool in the form of a digital spreadsheet available at <https://www.practicemind.com/schedule>.

Chapter 11: Bringing Novelty into Your Practice Sessions

When people encounter a novel stimulus, a cascade of brain responses is activated. These responses have a wide range of effects on cognition, perception, and motivation—all important elements of learning. This chapter introduces several creative practice strategies to help bring novelty into your practice sessions. As stated in the previous section, “How to Use *PracticeMind*,” please give each new idea and concept several tries and plenty of time before deciding if it is helpful. Then, after experimenting with all the different concepts in this chapter, start inventing your own novel ways of practicing to keep your mind creatively engaged in your learning process.

Part 3: Implement

The third part of *PracticeMind* is all about the active part of practicing and the specific techniques to use in your practice sessions.

Chapter 12: Score Study

Studying the score is one of the most important aspects of learning a new work or revisiting an old work. There are so many details in a musical score and many different ways to study a score at different stages of learning. This process should become a permanent part of the daily practice routine since new details can reveal themselves at any point of the learning process. When starting a new work studying the score can help with getting the big overview, and as more time is spent with a work, the score study shines a light on the deeper artistic intentions of the composers. In this chapter, the first movements of the *Kreutzer Sonata*, op. 47, and the Cello Sonata in A Major, op. 69, by Beethoven, have been selected to illustrate several important aspects of score study.

Chapter 13: Mental Practice and Visualization

Mental practice is a powerful tool that is being used at an increasingly higher rate by top performers in sports, performance arts, and several other fields. It involves an activation of the neural system by visualizing the performance of a task or body movement without actually carrying out the movement. Using visualization in this manner not only helps strengthen musical memory but is also beneficial for improving a number of other aspects such as motivation, control of emotions, and mental preparation for performance.

Chapter 14: Creative Problem Solving

Problem solving is an integral part of all creative endeavors, from building a rocket to Mars, creating a masterful work of art, and developing a high-level technique on a musical instrument to name a few. The problem-solving techniques explored in this chapter are framed by the metacognitive planning cycle seen previously in this book. Three practice case studies are introduced in order to show the problem-solving process applied to real practice problems.

Chapter 15: Going Outside Your Comfort Zone

Going outside your comfort zone is one of the aspects of the Deliberate Practice Philosophy that was first introduced by the prominent psychologist K. Anders Ericsson. In this chapter, we explore the ways in which sport psychology can help musicians to push beyond boundaries and include several practice tools geared toward going outside your comfort zone.

Chapter 16: Rhythm Training

Rhythm is one of the core elements of music, and without a strong sense of rhythm, it is impossible to become a complete musician. A number of topics related to rhythm are explored here, such as entrainment and rhythm, inner and outer rhythm, and practical application of rhythm training.

Chapter 17: Metronome

For close to two-hundred years the metronome has served as a valuable tool for composers to recommend specific performance tempos and to help instill rhythmic control in personal/ensemble musical practice. Metronome practice strategies are shown here to support your practice in developing a strong internal pulse.

Chapter 18: Velocity Studies

This chapter provides a systematic method of how to use impulse units for developing speed and coordination of the two hands. Different velocity techniques, including beat twists and beat shifts, are introduced in this chapter and applied to musical examples.

Chapter 19: Octaves

Many string players have difficulty performing octaves in tune. The mysteries of octave mastery are unveiled through a study of the primary and secondary parameters of octave playing. A number of technical exercises and samples from the repertory are used here to illustrate how to practice this exciting and challenging technique.

Chapter 20: Sound Production

In this chapter the three primary bowing parameters and the four secondary bowing parameters are explained. Through active control of these parameters, you will find your bow in the right place (on the string) at the right time. A number of exercises geared toward the concept of changing the contact point via the slanted bow are introduced in this chapter.