

# Practice (learning method)

**Practice** or **practise** is the act of rehearsing a behavior over and over, or engaging in an activity again and again, for the purpose of improving or mastering it, as in the phrase "practise makes perfect". Sports teams practise to prepare for actual games. Playing a musical instrument well takes a lot of practise. It is a method of learning and of acquiring experience. The word derives from the Greek "πρακτική" (*praktike*), feminine of "πρακτικός" (*praktikos*), "fit for or concerned with action, practical",<sup>[1]</sup> and that from the verb "πράσσω" (*prasso*), "to achieve, bring about, effect, accomplish".<sup>[2]</sup> In *American English*, *practise* is used as both a **noun** and a **verb**, but in *British English*, there is a distinction between *practice*, used as a noun, and *practise*, used as a verb (see **spelling differences**).

Sessions scheduled for the purpose of rehearsing and performance improvement are called **practises**. They are engaged in by sports teams, bands, individuals, etc. "He went to football practise every day after school", for example

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## Common types

Some common ways practise is applied:

- To learn how to play a musical instrument (musical technique)
- To improve athletic or team performance
- To prepare for a public performance within the performing arts
- To improve reading, writing, interpersonal communication, typing, grammar, and spelling
- To enhance or refine a newly acquired skill
- To maintain skill
- To learn martial arts; kata and sparring are common forms of practice
- To master tasks associated with one's occupation (e.g. a cashier using a POS system)

How well one improves with practice depends on several factors, such as the frequency it is engaged in, and the type of feedback that is available for improvement. If feedback is not appropriate (either from an instructor or from self-reference to an information source), then the practice tends to be ineffective or even detrimental to learning. If a student does not practise often enough, reinforcement fades, and he or she is likely to forget what was learned. Therefore, practice is often scheduled, to ensure enough of it is performed to reach one's training objectives. How much practice is required depends upon the nature of the activity, and upon each individual. Some people improve on a particular activity faster than others. Practice in an instructional setting may be effective if repeated only 1 time (for some simple verbal information) or 3 times (for concepts), or it may be practised many times before evaluation (a dance movement).

## Deliberate practice

Psychologist K. Anders Ericsson, a professor of Psychology at Florida State University, has been a pioneer in researching deliberate practice and what it means. According to Ericsson:

<span></span>	<div>People believe that because expert performance is qualitatively different from a normal performance the expert performer must be endowed with characteristics qualitatively different from those of normal adults. [...] We agree that expert performance is qualitatively different from normal performance and even that expert performers have characteristics and abilities that are qualitatively different from or at least outside the range of those of normal adults. However, we deny that these differences are immutable, that is, due to innate talent. Only a few exceptions, most notably height, are genetically prescribed. Instead, we argue that the differences between expert performers and normal adults reflect a life-long period of deliberate effort to improve performance in a specific domain.<sup>[3]</sup></div>
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One of Ericsson's core findings is that how expert one becomes at a skill has more to do with how one practices than with merely performing a skill a large number of times. An expert breaks down the skills that are required to be expert and focuses on improving those skill chunks during practice or day-to-day activities, often paired with immediate coaching feedback. Another important feature of deliberate practice lies in continually practicing a skill at more challenging levels with the intention of mastering it.<sup>[4]</sup> Deliberate practice is also discussed in the books *Talent is Overrated* by Geoff Colvin<sup>[5]</sup> and *The Talent Code* by Daniel Coyle,<sup>[6]</sup> among others. This includes, *Grit: The Power of Passion and Perseverance*, by Angela Duckworth<sup>[7]</sup> and *Outliers: The Story of Success*, by Malcolm Gladwell.<sup>[8]</sup>

Duckworth describes how deliberate practice affects education, motivation, and learning outcomes.<sup>[7]</sup> In a presentation she gave at the American Educational Research Conference in 2014,<sup>[9]</sup> she spoke about the importance of grit – of student’s focusing on material with which they struggle. In her view, grit allows a student to persevere and succeed in the face of adversity. Duckworth says that if a student can apply grit in their academic work, their effort will increase. Duckworth says that effort is equally important as talent in achieving academic goals. In a study she conducted at the National Spelling Bee in Washington, D.C, she found that the students who used the grit tactic tended to advance to the finals.<sup>[9]</sup>

Two recent articles in *Current Directions in Psychological Science* criticize deliberate practice and argue that, while it is necessary for reaching high levels of performance, it is not sufficient, with other factors such as talent being important as well.<sup>[10][11]</sup> In addition, Malcolm Gladwell's point-of-view about deliberate practice is different from Ericsson's view. Gladwell, staff writer at *The New Yorker* magazine and author of five books on The New York Times Best Seller list including *Outliers: The Story of Success* said in a May 2016 Freakonomics podcast interview that, "He's [Ericsson] a hard practice guy, and I'm a soft practice guy." Gladwell claims that talent is important with an intentional dedication to practice and having a support system is vital to produce superior outcomes. It is not all about methodical effort as Ericsson claims.

### Behavioral versus cognitive theories of deliberate practice

Behavioral theory would argue that deliberate practice is facilitated by feedback from an expert that allows for successful approximation of the target performance. Feedback from an expert allows the learner to minimize errors and frustration that results from trial-and-error attempts. Behavioral theory does not require delivery of rewards for accurate performance; the expert feedback in combination with the accurate performance serve as the consequences that establish and maintain the new performance.

In cognitive theory, excellent performance results from practising complex tasks that produce errors. Such errors provide the learner with rich feedback that results in scaffolding for future performance. Cognitive theory explains how a learner can become an expert (or someone who has mastered a domain).<sup>[4]</sup>

### Motivation

Learning is closely linked to practice and motivation. Sociocultural theory applied to motivation of practice suggests that motivation resides not within the individual, but within the domain of social and cultural contexts united by shared action and activity. Thus, motivation to practice is not simply within the locus of the individual (see **Incentive theories: intrinsic and extrinsic motivation**), but rather the locus is the activity and its specific contexts of which the individual is a participant.<sup>[12]</sup>

Psychologist K. Anders Ericsson writes about motivation to practice. He creates a theoretical framework for acquisition of expert performance that discusses the issue of a lack of motivation to practice. He writes:

<span></span>	<div>Engagement in deliberate practice is not inherently motivating. Performers consider it instrumental in achieving further improvements in performance (the motivational constraint). The lack of inherent reward or enjoyment in practice as distinct from the enjoyment of the result (improvement) is consistent with the fact that individuals in a domain rarely initiate practice spontaneously.<sup>[3]</sup></div>
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The motivational constraint, mentioned above, is important to consider as it is an important premise of Ericsson's theoretical framework for deliberate practice. He finds that because participating in deliberate practice is not motivating that individuals must be engaged and motivated to take part in improvement before deliberate practice can even take place.<sup>[3]</sup> He talks about the success of children who were simply exposed to an activity for months by their parents in a fun way. These children displayed immense interest in continuing the activity, so the parents then began implanting deliberate practice. This came to be extremely successful, which Ericsson cites as proof that his theory works when put into action. He finds that children must have the passion to improve their skills before deliberate practice begins in order to really be successful.<sup>[3]</sup>

### Deliberate practice in medical education

Duvivier et al. reconstructed the concept of deliberate practice into practical principles to describe the process as it relates to clinical skill acquisition. They defined deliberate practice as:

- repetitive performance of intended cognitive or psychomotor skills.
- rigorous skills assessment
- specific information feedback
- better skills performance<sup>[13]</sup>

They further described the personal skills learners need to exhibit at various stages of skill development in order to be successful in developing their clinical skills. This includes:

- planning (organize work in a structured way).
- concentration/dedication (higher attention span)
- repetition/revision (strong tendency to practice)
- study style/self reflection (tendency to self-regulate learning)<sup>[13]</sup>

While the study only included medical students, the authors found that repetitious practice may only help the novice learner (year 1) because as expertise is developed, the learner must focus and plan their learning around specific deficiencies. Curriculum must be designed to develop students' ability to plan their learning as they progress in their careers.

Finally, the findings in the study also have implications for developing self-regulated behaviors in students. Initially, a medical student may need focused feedback from instructors; however, as they progress, they must develop the ability to self-assess.

### As maintenance

Skills fade with non-use.<sup>[14]</sup> The phenomenon is often referred to as being "out of practice". Practice is therefore performed (on a regular basis) to keep skills and abilities honed.

### See also

- Dreyfus model of skill acquisition
- Hebbian theory
- Homework
- Kata
- Learning
- Muscle memory
- Neuroplasticity
- Physical exercise
- Praxis
- Procedural memory
- Rehearsal
- Sparring
- Training

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A musician practicing his instrument.



ANCOP officer cadets practice detaining an armed insurgent at the Mazar-e Sharif Regional Training Center on December 12, 2010.