

The Talent Code – Daniel Coyle, c. 2009

Greatness isn't born. It's grown. Here's how.

Part I

Clarissa is an eleven-year-old who usually doesn't practice well and makes slow progress with her clarinet. One day she hears Woody Herman play "Golden Wedding" and she loves it and wants to play it really well. She gets the music and starts to practise. She plays the first few notes, stops, frowning and intent, and puzzles out the notes. She repeats and repeats correcting every note, every rhythm. Adding layer after layer of spirit, rhythmic complexity and musical artistry, she plays more and moves back and forth between playing phrases and focusing intently, correcting errors, striving to perfect it. Her body posture is tilted intently forward, her face squinting. Her work is carefully targeted, error focused, aimed at improvement, repeating and refining, repeating again. In only minutes, she achieves more than she has ever attempted to achieve before.

Clarissa was engaging in "deep practice", the kind of practice that leads to talent. As she was firing the neural circuits that would lead to knowledge, skill, and musicality, the neural pathways were being insulated with myelin and the conductivity of those circuits was therefore improving. A well-myelinated neural pathway becomes up to 100 times more conductive and translates into what we call talent. The result is an unconscious competence that often seems inherited, but is always the result of the myelinization process. Recent research has led to the following discoveries:

- Myelin and the support cell that wraps myelin around the firing neural circuit are present wherever nerve cells are present.
- Whenever you exercise a skill: swing a racquet or a golf club, tune a chord, use a turning tool on a lathe, a highly specific circuit lights up in your body, engaging hundreds of thousands of neurons.
- The more the skill is exercised, the less aware you are of using it. It begins to feel natural, like you've always had it. Walking and talking are good examples.
- Nerve firings cause the wrapping of myelin around the active neurons, myelin increases impulse speed, and impulse speed is skill. The effect is similar to increasing bandwidth.
- Struggle is not optional – struggle is required. To get a circuit to fire optimally, you must fire the circuit as well as possible for you, inevitably making mistakes and tending to those mistakes, slowly but surely correcting and honing the circuit.

Age matters. The availability of myelin peaks at various times of early growth, and its availability increases generally until about age 50 when it begins to decline. But about 5% of our myelin wrappers still remain at the end of life. Learning and other skill-building activities remain possible throughout life.

World-class skill levels require about 10 000 hours of deep practice, usually over about ten years. Geniuses are those who have developed an unusual facility for deep practice: focused, passionate, obsessive practice.

Myelin allows human beings to adapt to circumstances and therefore learn an extensive array of disparate skills. We have more myelin than any other organism, but fewer nerves come wrapped at birth – just the ones for crying, suckling, and hearing some distinctions.

Deep Practice – The Real Route to Carnegie Hall

The key to developing talent is to practice in a particular way that Coyle calls “Deep Practice”. It has certain characteristics.

1. Rule 1 – Chunk it up and down

- a. First, absorb as a whole the thing that you are practicing. In learning music for instance, hearing the whole song (notes, words, breathing, interpretation, etc.) several times until it feels familiar. This provides the overall context of the learning task.
- b. Then break the task down into chunks. For example, listen first to the flow of the notes and add the visual dimension of seeing the rise and fall of the notes on the music. Do this several times. Then, for a time, focus on the lyrics and their meaning, perhaps deliberately considering the motions and emotions that they suggest. Go on, perhaps to hearing the vertical (chord) context of each note, perhaps identifying fifths, thirds, sevenths and octaves that allow you to relate your part note to the others. Later, integrate these skills with the emotional and interpretive movement of the song.
- c. Slow it down, particularly when anything problematic arises. Work small portions, slowing them down microscopically, then speeding up again, having made needed corrections.

2. Rule 2 – Repeat it

- a. Repetition is invaluable and irreplaceable and should follow after chunking down and correcting errors. Always be repeating what you know to be right.
- b. Work with intensity – zoned, focused, intent with a goal to eliminate any variation from your model of perfection.
- c. Even the best practitioner should not extend a learning session beyond an hour. 20 minutes of deep practice on a particular task is probably optimal.

3. Rule 3 – Learn to feel it

- a. First tune up your instrument, your voice. Learn to get the feeling of singing in your chosen way: relaxed, resonant, without tension. Then tune up your ear. Become aware of being aware of the excellence of your tuning. This is especially important in the barbershop style where ringing chords is a major goal and the style is *a cappella* (without instrumental accompaniment).
- b. Be very bothered about mistakes. Learn to hear and feel progressively smaller “bits away from perfection”.
- c. Follow these steps:
 - i. Pick a target

- ii. Reach for it
- iii. Close or reduce the gap
- iv. Return to step one

The longer you stagger, the more quickly you will succeed. Don't settle too soon and accept an unsteady gait, so to speak. Emulate the toddler's learning strategy. The genius is one who has made a life practice of "Deep Practice".

Ignition – Building the Needed Motivation

Only the highly motivated can succeed at the highest level. Motivation can be suggested by certain strategies, but people must decide to choose that they really want to succeed at a particular level, give the commitment of time and energy needed. You want to reach the mountain top of your organization, but organizations can have multiple mountain tops and yours must be clearly defined: the best in your community, the most involved in your community, the biggest, the funniest, the friendliest, the most entertaining, the most culturally integrated, the best senior group, the best youth group, the best small group, the best in any number of different ways.

An organization that attracts motivated members has certain characteristics:

1. You function and work as a cohesive group to which people want to belong. Fellowship and striving, mutual support, respect of those who contribute extraordinarily, genuineness in interactions, and the willingness to honor each other's contributions all contribute to the creation of a group to which people want to belong.
2. The group works together to achieve the goals it sets. Members help and accept help; they all work towards the betterment of everyone's contribution. In a sense, you all live in a unique place that may seem strange to others but which you all support in extraordinary ways.
3. The world of your organization is shaped like a mountain with a kind of paradise at the top. Everyone strives together to scale the mountain.

Coaching that leads to talent

Skill is a cellular process of myelination that grows with deep practice. Ignited motivation provides the needed unconscious energy for it. Those who facilitate the deep practice for the group are the teachers and coaches. They tend to have certain characteristics and behaviours in common:

1. They tend to be older veterans who have spent 30 to 40 years developing expertise. Often they missed the frame for optimal skill building for some reason, but have a profound understanding of what is needed.
2. They tend to face learners with a deeply confident manner, and often with a steady, unblinking gaze.
3. They observe and listen more than they talk.

4. They offer small, concise, highly targeted adjustments to those who are engaged in learning.
5. They offer suggestions personalized to individual personalities and needs.

The Four Virtues:

1. Experienced perspective – The coach has the “matrix” and groks the situation at a profound level, having had many significant learning experiences over time.
2. Perceptiveness – The coach perceives the needs of the learner and is always checking to determine what they know and what they need to know.
3. Multiple strategies of the “Do this. Yes. Now do this” kind. His behaviour is compelling, urgent, strategically impatient, perhaps even pushy.
4. Theatrical honesty – The coach often has flamboyant traits, has an empathic, honest desire for connection with the learner, and works from the learner’s mistakes while focusing on success and celebrating it with jubilant repetition.

When the goal is for speed, flexibility and split second decision-making, as in sports, the coach tends to support lots of uninterrupted practice of intense focus and activity. Coaching in team sports is often of this sort.

When the goal is precision and correctness, the coach initiates lot of specific feedback, retries, and correction to obtain near perfection. Coaching of dance and musical forms is often of this sort.

By the way, eating foods with DHA and omega-3 fatty acids provides nutrients for the building of myelin.

In Summary

A chorus that wishes to succeed at a high level will be wise to adopt certain attitudes and behaviours:

- All should know of the relationship between talent and nerve pathway myelinization.
- All attend to conscious adoption of the characteristics of deep practice.
- The leadership and members will also strengthen the sense of belonging for every member.
- All will strive to hunt for improvements to make, remaining unsatisfied with current levels of expertise, whatever they may be.
- All will seek to see the big picture in their learning, and simultaneously chunk things down for careful attention and practice.
- All will repeat and wrap myelin around the most perfect learning they can manage.
- All will honor and support each other, building an environment supportive of learning.

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