Chapter 5
The Impact of Self-efficacy

Abstract Based on studies, the degree of self-efficacy appears to have a strong relationship with positive indicators of employees, such as their well-being, work engagement, and achievements. Other positive indicators of self-efficacy have also been observed, such as the positive effects on well-being and negative effects on burnout. Self-efficacy was described by the originator of the concept, Bandura, as the belief in one’s own ability to complete a particular task in a particular situation. It concerns the belief in one’s own ability and not the possession of specific competences.

Keywords Self-efficacy · Personality traits · Work engagement · Sustainable performance

5.1 Introduction

“The best performers are the ones who continue on paths that match their strengths and talents and that show their self-efficacy and originality,” says Adam Grant in his book *Originals* (2016). Adam Grant (1981) is a professor at Wharton and a lauded researcher in the field of management and psychology. He earned his degree at Harvard with honors and was awarded with the John Howard Scholarship for his research. He has been named one of the 440 best psychologists in the world.

For 14 years, Adam Grant studied five thousand entrepreneurs and discovered that the most successful of them only followed a handful of rules. The five most important are as follows:

1. Continue to wonder what has not been done yet, or at least not in a certain way, and ask yourself why.
2. Become an idea machine; keep active and keep developing.
3. Be aware of your weaknesses and learn to use them as little as possible.
4. Use your strengths to become increasingly experienced in what you specialize in.
5. Always keep your goal—your reason—in mind!
Adam Grant’s outcomes seem to perfectly match those uncovered by Ericsson and others in their studies: deliberate practice is vital for sustainable performance. Keep doing and repeating those things that match your passion and strengths, and make conscious choices in how you use your time and energy to go from good to excellent. And always remember that it is about courage. Failure is part of the deal.

5.2 Risk Avoidance

“Regretting something that you have not done, is worse than regretting something you did do. I can accept failure,” as basketball legend Michael Jordan put it. “Everyone fails at something. But I can’t accept not trying. I have missed at least 9000 shots in my life, lost over 300 games, and 26 times I was entrusted with the deciding shot and missed. I failed many times in my life. And that’s why I was successful.”

Despite popular belief, successful entrepreneurs, as well as legendary athletes, top musicians, scientists, and others who excel at what they do, are not actually risk-takers, says Grant. According to Grant, the word “entrepreneur” literally means “avoiding risks.” After fourteen years of research, he concluded that the one thing successful entrepreneurs have in common is that they strive for originality while keeping all other factors as stable and secure as possible. That way they can be self-effective in the areas where their strengths lie.

Take the “rebel” Steve Jobs for instance. He only quit his job and school after he had been developing his software ideas for years. Larry Page, creator and founder of Google, continued his studies at Stanford for years before actually starting his own business and dedicating all his time and energy to it. Henry Ford’s story is quite similar too. He continued working for Thomas Edison for two years before he felt ready to quit his job. Subconsciously, these men all felt that they first needed to further develop their ideas - they had to get more relevant experience - before they could put everything aside in order to deliver their unique performance (Grant 2016). Practice makes perfect, is something Adam Grant also concludes.

5.3 Domain-Specific Knowledge Is Power

How is it possible that IBM’s world-famous Deep Blue, which can analyze 200 million moves per second, can still lose chess games against grandmasters? The answer lies in the fact that people have access to knowledge that computers cannot comprehend. This has been called “deep knowledge” by computer scientists such as Cohen and Feigenbaum (Cohen and Feigenbaum 2014). The most important ingredient in any expert system is knowledge.

But as is the case with experience, not all knowledge is equal. It is about domain-specific knowledge. As Geoff Colvin puts it: “Power is having the right knowledge.”
Dutch psychologist, Adriaan de Groot, studied the ways in which the knowledge of world-class chess players differed from that of average players. Surprisingly, top performers did not seem to consider more moves than average players. Nor were they able to see many more moves ahead.

But then what was the difference? It turned out that world-class players had much greater specific knowledge about chess than average players. Up to a hundred times more even. Moreover, they were able to better organize that knowledge, making it easier for them to access it. That is how they were able to come up with fundamentally different solutions compared to average players.

The opposite is true for many businesses. A lot of averagely performing companies give their employees—particularly upcoming managers—the opportunity to work in many positions in the company in order to learn every aspect of the business. It is the top-performing organizations that let their leaders work in the same domain for long periods of time. Because of this, they know everything there is to know about their field of expertise and network. The most successful companies, therefore, train their managers in a domain-specific way (Harvard Business Review, June 2006). The most successful leaders are the ones who have this “deeper” knowledge. Deliberate practice and self-efficacy are what make the difference. Deliberate practice enables you to build specific knowledge and skills that you need to achieve sustainable performance in your area of expertise.

By continually challenging yourself and improving your strengths, you shape an attitude that can later be labeled as unconscious competence. Without even being aware of it, you collect more knowledge and information than others around you. As a result, you require less insight than others at certain critical moments (p. 87). You’re able to respond appropriately without any help.

Think about it for a second; what good is all that knowledge if you are not able to access it at the moment supreme, in just a fraction of a second? Sustainable performance seems to require skill related to your strengths. That is the skill you should consciously train in order to feel confident enough to trust in it.

5.4 What Is Self-efficacy?

What exactly is self-efficacy? According to the creator of the Self-Efficacy Theory, Albert Bandura, self-efficacy is the confidence that a person has in their own ability to successfully influence their surroundings by completing a certain task or solving a problem (Bandura 1977). Self-efficacy is considered one of the most important elements in theories on motivation. People are more likely to be motivated to perform a certain action when they feel they have the ability to do it successfully. According to Albert Bandura, they are more likely to display and continue the desired behavior. Self-efficacy influences many areas, including motivation for study and career choice.

Self-efficacy differs from self-confidence in that the latter is about confidence in yourself, whereas self-efficacy is the estimated ability one has to complete a certain
34 5 The Impact of Self-efficacy

task. It is different from the concept of “efficiency” because it is not about a person’s actual efficiency, but about how much confidence they have in their efficiency.

When people with high self-efficacy achieve a certain goal, there is a good chance that their next goal will be more challenging. At least, according to theory. And if a goal is not achieved, the way people react varies from person to person. Some respond with renewed commitment, others with despair, and apathy. Self-efficacy is an important factor in this. Results can be self-reinforcing. If a person is not successful at achieving a new goal, it can reduce their self-efficacy, making it even less likely that they will achieve a subsequent goal because their motivation was lowered. On the other hand, successfully achieving goals can increase self-efficacy and therefore the future likelihood of success.

5.5 Deliberate Practice and Self-efficacy

But how can deliberate practice effectively be put into practice with regard to self-efficacy? Several studies show that by continually repeating the right exercises and putting them into practice, an average professional can transform into an exceptional performer (Bandura 1977; Collins 2001; Colvin 2010; Kodden 2014). It is the companies and individuals that know what is required to take little steps every day towards continual improvement that manages to achieve unique performance. Starting small and moving onto large, going from an A to an A+, it requires deliberate practice and self-efficacy.

According to Colvin, it can be argued that generally speaking, practice is simply the idea of constantly pushing yourself. Deliberate practice refers to a level of practice that goes beyond that of what normal people do (Colvin 2010). More specifically: constantly practicing your strengths, allows you to yield larger returns, know more, and remember more. According to Colvin, years of deliberate practice can even change an individual’s body and mind. Let us take a closer look at these three aspects.

5.6 Top Performers See Less and Understand More

As a result of deliberate practice, top performers receive more relevant information. In his book, *Blink: The power of thinking without thinking* (2005), best-selling author Malcolm Gladwell describes how certain top athletes have the ability to achieve incredible response times. Tennis players who could anticipate the direction of their opponent’s serve before they even made it. Top players who had gone beyond normal practice and were no longer focusing on reflexes and response times—limited by the laws of the universe—or on the ball itself, which would simply go too fast when served by the world’s top servers, but instead on their opponent’s body language. Researches proved that the eyes of these “deliberate practitioners” were no longer focused on the ball at the moment of the serve, but rather on the hip, shoulders, and
arms of the person serving. By “letting go” of the ball, they managed to predict its
direction and were able to react in time to balls that would normally be moving too
fast for natural human reflexes and would have been impossible to return.

Other researchers presented a movie clip to both a group of average tennis players
and a group of top players that showed hundreds of serves. Both groups were asked
to predict the direction in which the ball would be played. The group of average
players had no clue, but the best players could make accurate predictions, allowing
them to return the serve. They were able to react quicker without improving their
reflexes. They knew where the ball was going.

This phenomenon of seeing less and understanding more can be found in many
studies. Not just in sports, but many other activities as well. In his book Talent is
Overrated (2010), Colvin takes the activity of typing as an example. The fastest
typists are able to type at a certain speed because they are able to stay ahead in the
text instead of looking at their fingers to produce text that they are working on at that
moment. The same is true for juggling. The best jugglers do not look at the balls,
but at the paths that the balls will follow. As soon as the path changes as a result of
a mistake, they compensate. That way they can juggle a lot more balls or pins than
others. By seeing less, they actually see more!

Another example is a hospital study. It studied how x-rays were interpreted by
radiologists. Although the response time is not as important in this case, the correct
interpretation definitely is. Both expert radiologists as well as first and fourth-year
students were asked to correctly evaluate the x-rays. They were told that time was
not a factor.

The correct evaluation was paramount. The x-ray examples that were used
displayed several serious ailments, such as tumors or a collapsed lung.

It should come as no surprise that the expert group had the best results in the study.
When it came to evaluating the x-rays, domain-specific experts seemed better able
to interpret the smallest details. Their eyesight was not demonstrably better than the
other groups, but they could still interpret the details better and combine them into
an evaluation that was not obvious at first glance.

The same thing happened in a study on pilots and musicians. Practiced participants
turned out to be able to look beyond the surface. Top performers see less, which makes
them perceive more. They also understand the importance of indicators that average
performers do not notice. Sometimes the indicators are obvious, other times they
are not. Take Laura Rittenhouse, for instance. A financial analyst, she showed that
the more times an annual performance report had the word “I” in it, the worse a
company would perform in the future. In other words, egomaniacs are bad news.
Finding these kinds of—not always obvious—indicators requires extensive practice
and experience.
5.7 Top Performers See the Future

Top professionals know more because they often literally see the future. Top musicians stay ahead of their song texts and the best typists manage a similar feat. The power of looking ahead lies in gaining a new perspective in addition to the ones already available. This extra perspective is the difference between average and exceptional performance. Steve Jobs already knew where he was going before he invented his new products or had others do it for him. It was not about the product, but what the product would make possible. Although the product did not even exist yet, Steve Jobs had already thought of a use for it.

Practice makes perfect, that’s what makes Steve Jobs a true inspiration to me. His biggest strength was the additional perspective he had developed after years of deliberate practice. The same was true for Wolfgang Amadeus Mozart, Tiger Woods, the Hungarian Polgar sisters, and now the Netherlands’ own Max Verstappen. Years of deliberate practice gave them the additional perspective that allowed them to see into the future and produce incredible musical compositions, golf swings, chess moves, and lap times.

5.8 Top Performers Know More by Seeing Less

The aspect of knowing more by seeing less turns out to be vital for success in every domain of our lives. Because we are never able to receive and process as much information as we want in order to make a correct assessment, it is important to make the right decision in as little time as possible. Regardless of whether it is about ER surgeons, police officers responding to emergencies or professional athletes that have to react within a fraction of a second; the ability to respond quickly and correctly is a definite competitive advantage. The underlying skill is unconscious competence (Chap. 10) to evaluate the right indicators for success at specific moments in time. Top performers intuitively know how to distinguish the relevant aspects. And, as it turns out, this skill requires deliberate practice.

5.9 A Powerful Combination

Self-efficacy combined with deliberate practice as a source of constant change, and as the most powerful energy source for sustainable performance; exactly how powerful this combination is, has been demonstrated by research into the physical changes of sustainably performing professionals. Experienced and high-level endurance athletes were shown to have a larger than the average heart. A characteristic that was previously considered a natural competitive advantage—like talent—but later turned out to be the result of intense training. When these professionals stopped training,
their hearts would return to normal size. Top athletes did not only change the size of their heart, but also its composition (the amount of fast-twitch muscle fibers versus slow ones).

It turns out that even our brains can change the composition. An example is children who start practicing music. Their brains start to change; the regions that develop finger control, start to take up noticeably more space than in children who do not play an instrument. A study of London cab drivers also shows that drivers who had practiced for two years had developed their brains in a way that showed an increase in size of the area associated with spatial awareness and navigation. How is that possible? According to research, it is mostly the result of a bodily substance known as myelin. This is a white substance that improves the functioning of nerve fibers and neurons (Colvin 2010).

**Myelin**

Myelin is a fleshy substance that surrounds a lot of the axons in our nervous systems. Myelin gives the substance its white color. It allows impulses to be sent more quickly (increasing from 2 m/s to a maximum of 120 m/s). Without myelin, those impulses would take much longer to move from one nerve cell to the next through the axon. This is particularly important in the case of longer distances (such as in the peripheral nervous system). The myelin sheet consists of a double layer of lipids that is wrapped around the axon many times. This double layer of lipids is also present in cell membranes, as was discovered by structural research using electron microscopes. In addition to facilitating communication between nerve cells, myelin also prevents signals from jumping to unintended nerve cells, which in turn might cause a short circuit.

When you take the brain of professional pianists as an example, they show an increased presence of myelin in the brain areas that are the most relevant for pianists. Furthermore, research shows that the build-up of myelin is a very slow process. This is another indication of how deliberate practice seems to work. It is a process that takes years and then results in unconscious competence (Chap. 10). Small steps that combine to eventually make a big difference.

Research into myelin is still in the early stages, but all indications are that this bodily substance might provide the physical link between intense practice and excellent performance.

### 5.10 Results of the Study

How important is self-efficacy really? Well, this study shows that self-efficacy is the number one predictor of sustainable performance! Exactly as Bandura had described; self-efficacy as a drive for sustainable performance.

What can we do with this observation? What should we do? And what can we learn from it? The first thing to consider is that self-efficacy is not something that you either have or do not have, it is an attitude. Self-efficacy is an attitude of positive thinking, as Bandura puts it. Or the optimism—performance indicator number 4—about your
own ability to complete a specific task. It is this notion that makes the most important result of this study so interesting. Professionals with the right personality not only know how to rely on their skills but can improve those skills through deliberate practice. That enables them to further improve their performance for themselves and for their organizations in the future. Super talents do not exist.

The Dutch CEOs paid very little attention to the number 1 performance predictor. Self-efficacy was only the tenth performance indicator they would use to select professionals!

References

Bandura A (1977) Self-efficacy: toward a unifying theory of behavioral change. Psychol Rev 84(2):191–215
Cohen PR, Feigenbaum EA (2014) The handbook of artificial intelligence. Stanford, CA, HeurisTech Press/Los Altos; CA, William Kaufmann, Inc
Collins J (2001) Good to great. Why some companies make the leap … and others don’t. New York, NY, HarperCollins Publishers
Colvin G (2010) Talent is overrated. Penguin Group, New York, NY
Gladwell M (2005) Blink: the power of thinking without thinking. Little, Brown and Company, New York, NY
Grant A (2016) Originals: how non-conformists move the world. Viking, New York, NY
Kodden S (2014) Be a HERO. How to bring out leadership in everyone. Bernard Daniel Press