

"If you believe it, you can achieve it." This is one of the most-used motivational quotes aimed at encouraging people to understand that they can be successful if they believe in their abilities. In this article, Mark Otten and Ashley Samson discuss the science behind motivation in sport.

Scientists have researched self-beliefs and success in a number of domains such as business, family, education, and life in general. In the sport domain, researchers have spent many years trying to understand how athletes who believe in themselves generally attain more success than those who are plagued with self-doubt.

## Self-efficacy

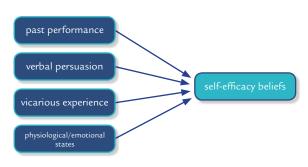
Self-efficacy can be defined as beliefs about your abilities to be successful in a given task. For example, if someone asks you to shoot a basketball, you will most likely make some sort of judgment about your probability for success in the task. That belief about whether or not you will be successful (am I going to make this or not?) is your self-efficacy.

Self-efficacy theory was developed by famous psychologist Alfred Bandura in 1986 and it says that people will be more likely to engage in behaviours that they believe they can successfully perform, and avoid behaviours in which they feel that they will be

unsuccessful. People with high levels of self-efficacy are more likely to pursue challenging goals, cope with pain, and persevere through setbacks, thus leading to success on the field. On the other hand, those with low self-efficacy avoid challenges and tend to give up when confronted with obstacles, which can lead to impaired performance.

# Sources of self-efficacy

Since self-efficacy has been shown to be a strong influence on performance in athletes, it is important to understand where those beliefs come from. According to researchers, self-efficacy perceptions are the product of four main sources of information: past performance accomplishments, verbal persuasion, vicarious experience/modelling, and physical/emotional states.



When investigating a new idea, scientists must ask: what factors contribute to this? Here we have identified four factors which may contribute to self-efficacy.

The referee declares Nicola Adams the flyweight boxing winner at the London 2012 Olympic Games.

Key words
sports psychology
self-efficacy
motivation
coaching



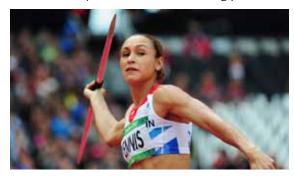
"I believe strongly in my capabilities. There's a lot of confidence as well, with my record over the past few years. I've built up this feeling on big points that I can do it over and over again."

Roger Federer, 2004

### Verbal persuasion

Verbal persuasion is a second influence on efficacy beliefs and can come in the form of feedback and speeches given by coaches or others, expectations of others, or even self-talk. Confidence in your abilities can be influenced by the encouragement, or discouragement, of other people, especially those whose opinions are greatly respected (i.e. peers, significant others, superiors).

In most sports, coaches rank pre-game speeches as the one of the most effective methods for raising the efficacy beliefs of their athletes. In the previously mentioned study on distance runners, one athlete commented on how encouragement influenced her beliefs in her abilities for running the marathon distance, "If it was just me and I didn't have any encouragement from others, I don't think I could stay confident in the marathon" and "knowing that my friend is there with me, telling me I can do it, that boosts my confidence....She's a big part of it."



Jessica Ennis, winner of the women's heptathlon at the London 2012 Olympic Games. She has a degreee in psychology from the University of Sheffield.



Women's basketball: Russia plays Australia for the bronze medal at the London 2012 Olympic Games.

### Vicarious experience

Self-efficacy is also influenced byvicarious experience. Learning through vicarious experience, also known as modelling, is when you learn by watching someone else successfully perform the desired task. By watching someone like you experience a positive outcome in a desired behaviour, your confidence in your chances for success are enhanced, which leads to higher self-efficacy beliefs.

For example, a research study with Ironman triathletes found that athletes competing in their first race felt high self-efficacy for completing the race based on watching friends who finished the race previously: "I kind of compare myself to my friends, and if they have done it and survived, I can do it."



Team-talk from a coach is important at all ages.



Nan Zhang and Yunlei Zhao of China celebrate winning gold in the Mixed Doubles Badminton

### Psychological information

The last source of efficacy information is physiological information, which is basically the physical feelings and processes happening in your body. Physiological information can include perceptions of strength, fitness, fatigue, or pain and can be measured by aerobic capacity, heart rate and perceived exertion levels (how hard you feel you are working). In sports, this is really important because of the physical nature of the activities and if you feel good physically, you will feel higher efficacy beliefs for being successful in the activity.

For example, if someone asks you to swim five hundred metres and you feel energetic and loose, the chances are that you will feel high efficacy beliefs towards swimming, while on the other hand if you feel tired and stiff, your efficacy beliefs will most likely be lowered. Going back to the distance runners from earlier, one athlete said, "When I feel strong, I know I can do something...if my body feels up to it, I know I can do it."

## Confidence and perceived control

Today, sport psychology researchers have taken Bandura's theories one step further to study an athlete's efficacy expectancies within a particular sport. That is, Michael Jordan might have been quite confident when he was playing basketball, but not so much when he was playing rugby. So when we as researchers ask an athlete how confident he or she

is, we need to specify which sport or activity we are talking about (e.g. "How confident are you that you have the ability to improve and become more successful in basketball free throw shooting?").

To be successful, especially when there is pressure in sports, it is important to be confident. If you expect success, then you are more likely to be "clutch" (see Box). In fact, some recent research has shown that there is a specific component of this kind of positive thinking that is especially important in the big moment: perceived control. Have you ever experienced a feeling of complete control when playing a sport, or when giving another type of performance? Maybe you play a musical instrument: have you ever given a good performance when there is pressure, like when a large audience is watching?

### Who is a clutch player?

The concept of "clutch" is central to our understanding of sports. Simply put, a clutch player is one who performs better when the game is on the line. The usual criterion for recognizing "clutchness" is something along the lines of, "If your life depended on a jump shot/putt/hit being made, whom would you want to attempt it?" For most people, the answer would be Michael Jordan or Tiger Woods.



## Could you be clutch?

What the recent research says is that these feelings of intuition or control are most important when there is pressure, like at the end of the game and/ or when your parents are watching. Don't think about it; just shoot the ball. Researchers in the past have termed this "explicit monitoring theory". That is, if you consciously monitor what you are doing, or remind yourself to pay attention while playing, this is actually a bad thing when there is pressure. This will only increase your anxiety! Instead, be like Michael Jordan: feel confident, in control, and just rely on your intuition. Maybe you can be "clutch" too!

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