

The Psychology of Training Sets and Workouts – Using Physical Training to Develop Mental Skills (and mental skills to develop better physical training!)

By Wayne Goldsmith

Successful competitive swimming is the ability to maintain technical excellence at maximum speed when fatigued and under pressure.

To achieve this successful competitive state, swimmers and coaches need to work at developing a wide range of performance factors in training and in preparation for racing.

If successful competitive swimming was only about SWIMMING FAST – then preparation need only focus on the physiology of training and racing. However, the nature of competition requires athletes to SWIM FAST when fatigued and when experiencing the pressures of the competitive environment. The physical and mental aspects of performance are closely linked and very much dependent on each other for competitive swimming success.

Swimming fast is a combination of performance factors that in general can be classified as:

Physical

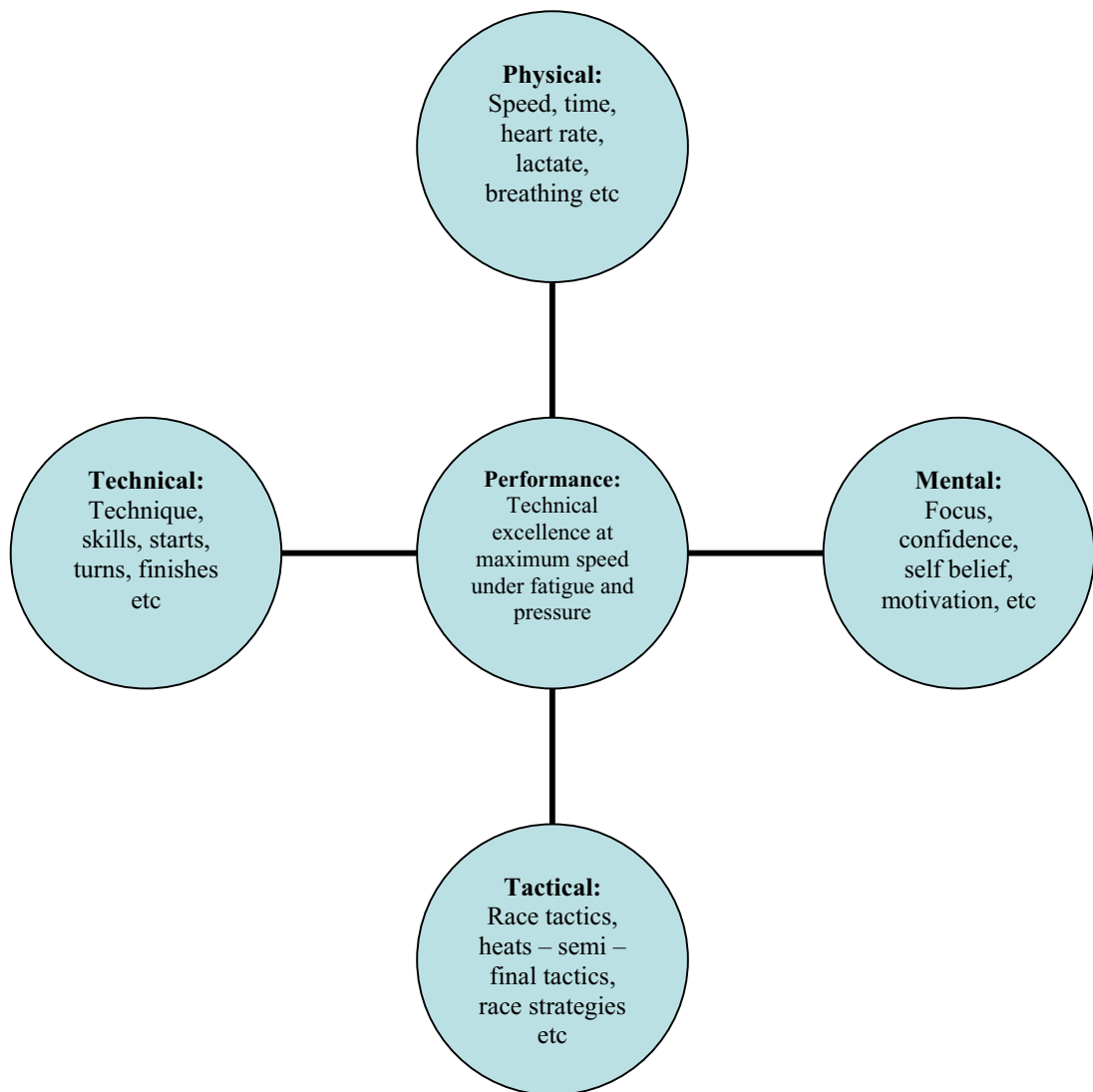
Mental

Technical

Tactical

There is a complex and constant interrelationship between these performance factors and variations or changes in any one can have an impact on any or all of the others.

This article will explore the relationship between physical and mental performance factors and how they can be used to make training and preparation for competition more effective.



The Performance Factors – The relationship between the PHYSICAL, MENTAL, TECHNICAL AND TACTICAL factors which lead to successful competitive swimming.

The relationship between physical preparation and mental preparation: The WHAT and the HOW.

Training set and workout design is the “nuts and bolts” of the preparation of competitive swimmer: it is the **WHAT** – in the question “what do my swimmers need to do to achieve their competitive goals?”

Designing training sets is usually done from a physical / physiological perspective, e.g. how many repeats / how much rest / at what speed / how many times in the cycle.

However, just as important in the training set and workout design equation is the consideration of mental factors such as motivation, self confidence, self belief, attitude and determination. These performance factors can have a significant bearing on the success or failure of the training set to achieve its desired outcome.

HOW YOU DO IT IS JUST AS IMPORTANT AS WHAT YOU DO!!!!.

The attitude and mental approach of the swimmer and coach is just as important as the fine details of the physical aspects of the workout.

For example:

A coach writes a workout on a white board for his/her swim team. The workout has been skillfully designed to take into account speed, heart rate, stroke mechanics and lactate levels.

Swimmer A pushes off and swims with poor technique, with uncontrolled speed, with poor turns, lazy “head up” finishes, no breathing control and has little or no interest in the goals of the training session.

Swimmer B swims with excellent technique, accurate pacing, perfect turns, breathing control and is motivated to gain every possible advantage from completing the workout to the best of their ability.

Both swimmers are doing the same workout. However, the impact of the workout is completely different based on the attitude and approach of the athlete.

The difference between a great workout and a less effective one is in the way the athlete and coach work together and the success of a workout is based on the motivation, desire, drive and attitude of the people involved. It is attitude and application that is vital: the mental approach can drive the physical effectiveness of the workout.

Great coaches have the ability to turn average workouts into great ones through their capacity to lead, inspire and encourage athletes to get the most out of everything they do.

Great athletes have several core values which make them great: sincerity, courage, humility, integrity, discipline, commitment, dedication and honesty. These core values are then reflected by their actions every day in everything they do – training, racing and living.

When great coaches and great athletes come together.....*anything is possible.*

Using training sets to evaluate the mental “fitness” of swimmers.

Training sets have traditionally been used to develop or evaluate the physical fitness or state of preparation of swimmers, ie *what* the swimmer does.

However, training sets can also be used to develop, measure and evaluate the “mental” fitness of swimmers, ie *how* the swimmer did the work.

For example:

Training set 10 x 50 on 1:30 All at Maximum speed

The coach instructs his team to perform this set and records the results. In this example the personal best time of each swimmer is 30 seconds.

Repeat	Swimmer A	Swimmer B	Swimmer C
1	34.1	30.1	33.1
2	34.2	30.3	33.1
3	35.0	31.3	33.7
4	34.6	31.8	33.4
5	33.3	33.1	34.5
6	34.4	33.1	33.4
7	34.4	34.4	33.9
8	35.1	34.5	33.8
9	33.8	35.1	33.2
10	30.0	35.3	33.2

Physiological Analysis of set results: The Physical side of performance.

Traditionally, coaches have looked at the results of sets like this and made assessments about the fitness, speed and training status of the swimmer.

In the above example, the coach may interpret the results as:

Swimmer A:

Not very fit – only able to achieve the targeted speed on one repeat.

Swimmer B:

Not very fit. Achieved the target speed for the set on two repeats and then progressively lost speed over the remainder of the set.

Swimmer C:

Reasonably fit. Did not actually achieve the target speed for the set but was consistent through the set and did not show any signs of slowing down due to fatigue over the set.

This basic data provides the coach with some simple information of the swimmers' *physical* fitness. However, what does this data tell the coach about the *mental "fitness"* of the swimmers?

Psychological Analysis of set results:

There are numerous factors which influence the psychological preparation and performance of swimmers. Just as factors like fatigue, dehydration and glycogen depletion can affect the **PHYSICAL** ability of a swimmer to complete a set or workout successfully, **MENTAL** factors such as motivation, confidence and attitude can also contribute to the overall success of the set or workout.

Consider the above example:

Swimmer A: Possibilities

1. As the swimmer was able to achieve a personal best time at the conclusion of the set, it may be determined that their fitness level and speed are reasonable. It could be suggested however that the results indicate the swimmer was not motivated to complete the set in a manner consistent with the coach's instructions and that the pain, stress and discomfort demanded in completing this set, ie all repeats at *maximum*, was something the swimmer preferred not to face.
2. Another possibility is that the swimmer, whilst in reasonable physical shape, lacked the confidence and self belief to push themselves to the limits expected by the coach in the set and deliberately "held back" to the end of set.
3. Yet another possibility could be that the swimmer felt low, slow and lacking in energy at the commencement of the set and then as the set progressed, gradually motivated themselves to lift to the high standard expected by the coach.

Swimmer B: Possibilities

1. The swimmer achieved two personal best times at the beginning of the set. This could suggest that the swimmer felt positive and confident and wanted to push themselves to their limits from the first repeat.
2. After achieving the two personal best times, the swimmer slowed over the set. It is possible the swimmer's physical fitness is reasonable, but their mental ability to deal with the pain and discomfort of maintaining near maximum efforts forced them to slow down over the set.
3. After swimming the two personal best times, the swimmer lost the motivation to continue to strive for any additional 30 second swims, ie they achieved their own personal goal in the first two repeats.

Swimmer C: Possibilities

1. Swimmer C lacked the confidence and self belief to drive himself to achieve the near maximum speeds required by the coach in this training set.
2. The swimmer lacks the ability to see the training set as part of the process to help him achieve his competition goals and therefore is not motivated to work hard in the set to successfully complete it at the target intensity level.
3. The swimmer was not ready mentally to begin a set of such high intensity and could not generate the motivation to lift to achieve the speed / effort required to complete the set at the target intensity level.

Whilst these examples are intended to be arbitrary possibilities in a hypothetical situation, it is apparent that:

- If swimming successfully in competition requires the development of physical and mental performance factors AND
- Successful competition depends on effective training and preparation THEN
- Effective training and preparation must include the integration of physical and mental performance factors in training sets and workouts.

Mental Warm Ups

If a coach sets a workout or training set for a swimmer, it is reasonable that the swimmer would be expected to prepare by completing an appropriate warm up. The purpose of the warm up is to prepare the athlete to complete the set to the standard and at the level required by the coach.

For example, the effective completion of a main set like 20 x 100 freestyle on 1:50 holding PB plus 15 seconds may require the swimmer to complete the following PHYSICAL warm up:

Easy 500 swim

8 x 50 Kick on 1:15

6 x 50 Pull on 1:00

4 x 50 build swim on 1:15

12 x 50 at target pace of main set on 55

200 Easy swim.

Main set

However, as successful swimming is dependent on mental, technical, tactical AND physical factors it is also reasonable to expect that the swimmer complete some form of MENTAL warm up in addition to the physical one to prepare to complete the set correctly.

Activity	Physical Warm up – KEY POINTS / COACHING CUES.	Mental Warm up – KEY POINTS / COACHING CUES
Easy 500 swim	Low intensity, 6/10 pace, relaxed easy	Use key words like “easy”, “relaxed”, “slow”. Focus on breathing slow and deep.
8 x 50 Kick on 1:15	Get legs moving and starting to work.	Keep breathing slow and deep and rhythmic. Start thinking about the goals to be achieved in the main set and the process of how to achieve them.
6 x 50 Pull on 1:00	Emphasise long pull with relaxed recovery.	Think about one aspect of the pull that you want to improve, e.g. high catch. Think about it each stroke and feel it improving. Think about how you will work on this during the main set, ie when you start getting tired and fatigued in the last few repeats.
4 x 50 build swim on 1:15	Bring the kick in as the speed increases each 50	Feel the change in pace. Imagine swimming downhill as the pace quickens. Feel light and fast and moving easily as the speed increases.
12 x 50 at target pace of main set on 55	Swim the set at the same pace as the main set.	Mental rehearsal. “Feel” the pace of the main set. Imagine how it will feel to swim at the pace of the main set and rehearse breathing patterns and other skills.
200 Easy swim.	Swim 200 at 1500 pace.	Use key words like “relax”, “easy”, “calm” and “steady”. Set clear goals for the main set.
Main set	Physically Ready to perform the set.	Mentally Ready to perform the set.

Summary:

1. Just as successful competitive swimming is a complex interaction of physical, mental, technical and tactical factors, so too training sets and workouts need to be designed to develop more than just the physical aspects of performance.
2. When analyzing the results of workouts coaches should consider all factors – and not be limited to the simplicity of working only with physical elements such as time and speed – to gain a better overall understanding of the swimmer.
3. When setting workouts and designing training sets, coaches should consider the physical, mental, technical and tactical elements of the competitive environment and utilise training sets *to prepare swimmers to compete successfully* not merely to train adequately.

The analysis of the mental state of individual athletes is well beyond the scope of this article (and this author). However, it is important that coaches consider the impact of mental factors on the successful completion of training sets and workouts.

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