

## Application of Techniques *PETTLEP Imagery* to Increase Karate Athletes' Self-Efficacy

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**ABSTRACT:** This research was conducted to evaluate the effectiveness of applying the PETTLEP Imagery technique, with a focus on Physical and Timing aspects, in increasing self-efficacy in non-professional karate athletes. This method involves realistic visualization of movements as well as simulating the duration of movements according to the match situation. The intervention was carried out in the Psychology Building at Muria Kudus University, with a duration of each session of 1–2 hours. The subject involved was a 23 year old female karate athlete who had experience competing from an early age. The implementation method includes physical training combined with visualization of movements and setting the duration according to match time. The results of the activity showed that the subject experienced a significant increase in self-confidence, concentration, and mastery of movements that were more accurate and regular. The combination of Physical and Timing techniques has proven to be effective in increasing the efficiency of movement techniques and reducing anxiety before the match. In conclusion, the PETTLEP Imagery technique can increase athletes' physical and mental readiness in facing competitions, with a positive impact on training performance and reducing anxiety.

**Keywords:** PETTLEP Imagery, Self-Efficacy, Karate Athlete



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## INTRODUCTION

Karate, originating from Japan, is a martial art that emphasizes both physical technique and philosophical values. Athletes require optimal physical and mental readiness to compete effectively. According to Ivan (2012), "Karate" comes from two words in the kanji letter "*canē*" which means empty and "*the*" which means hand, so the meaning is "empty hand". Karate is a martial art that allows a person to defend themselves without weapons. In karate martial arts, apart from teaching basic techniques such as punches, kicks, parries and throws, positive philosophical values are also contained.

In the sport of karate, a very good level of physical condition is required. Apart from technique, tactics and mental health, physical condition is very important to improve athlete performance. The dominant physical condition components required in this sport include strength, speed, agility, endurance, flexibility and explosive power, especially when facing stronger opponents or under high pressure. This is quite a challenge in the subject's career as an athlete. Inability to manage anxiety and fear can be detrimental to an athlete's performance, considering that karate is a sport that is greatly influenced by physical and mental readiness.

Self-efficacy in a sports context refers to an athlete's confidence in their ability to overcome challenges and pressure, both during training and competition. Athletes with high levels of self-efficacy tend to be more confident in facing opponents, more resistant to stress, and more motivated to improve their abilities (Vealey, 2001). According to Bandura (in Purnamasari, 2020), self-efficacy is a person's belief in his ability to carry out tasks or actions required to achieve certain results, as well as an evaluation of his competence in facing tasks, achieving goals, and overcoming obstacles.

One of the subject's experiences occurred while participating in a competition in Yogyakarta, where he had to face opponents with a larger physical stature. Feelings of anxiety and fear of defeat make the subject lose focus and feel resigned. This is a clear example of how uncertainty and lack of self-confidence can affect an athlete's performance, even though the subject still tries to compete as best as possible. In fact, in another match that took place suddenly, the subject suffered a physical injury. This shows that subjects often feel doubtful and pessimistic about their abilities, even though they always try their best.

Low self-efficacy can cause individuals to view problems as threats that trigger stress. According to Kaplan and Sadock (2010), anxiety is a form of response to stress that is triggered by the perception of threat. Thus, low self-efficacy will increase stress and produce anxiety signals. Hartono's (2012) research also shows that high levels of self-efficacy in students are correlated with lower levels of anxiety. This indicates that there is a negative relationship between self-efficacy and anxiety, namely the higher a person's self-efficacy, the lower their level of anxiety.

In conditions like this, karate athletes are often more easily influenced by comments or criticism from other people, whether from coaches, teammates, family or the public via social media. Negative comments or unconstructive criticism can worsen an athlete's mental condition, making them feel inadequate and doubt their potential. This can certainly hinder development and reduce performance that should be achieved.

One intervention that can be carried out to increase athletes' confidence in their ability to face training and competition situations optimally is the *PETTLEP* imagery technique (Morone et al., 2022). *PETTLEP* imagery is an intervention method based on visualization guidance (imagery) which aims to produce performance that meets expectations. *PETTLEP* consists of seven aspects: physical, environmental, time, task, learning stages, emotions, and perspective. This technique functions to improve sports performance, motor skills, motivation, and reduce competitive anxiety. By adapting this technique, subjects can learn to imagine themselves competing with confidence, even in challenging situations. Apart from that, *PETTLEP* imagery has also been proven to be able to increase athletes' self-efficacy, especially karate athletes.

### METHOD

PETTTLEP Imagery technique intervention activities were carried out in the Psychology Building at Muria Kudus University, Floor 4, in the classroom, with two meeting sessions. The first session uses physical techniques, while the second session uses timing techniques. Each session is 1–2 hours long.

This activity was carried out by a group whose members were Vikri Islah Khafidz (202260001), Muktafia Faidlul Muna (202260004), Isna Ulya Sabila (202260005), Salamatun Nisrinal Fadiyah (202260006), Sinta Novita Ramandani (202260007), Bryan Ansel Handoyo (202260008), Erlyta Bilgis Yunlistiyana (202260009), and Deomara Nisfa Laila (202260010).

This study involved a single-case application of the PETTTLEP imagery technique with a 23-year-old female karate athlete. Although not an experimental intervention with a control group, the implementation aimed to explore the technique's potential impact. Self-efficacy outcomes were assessed qualitatively through reflections and interviews, and quantitatively using a self-assessment scale adapted from the General Self-Efficacy Scale (GSES). Subjects had experience competing from an early age and were selected based on complaints of excessive anxiety when competing. Therefore, the intervention was carried out using the PETTTLEP Imagery technique to help reduce anxiety during competition, with the subject's consent and willingness to follow the technique based on the seven PETTTLEP aspects (Physical, Environment, Task, Timing, Learning, Emotion, Perspective).

In the preparation stage, intervention material was prepared referring to the PETTTLEP Imagery technique (Holmes & Collins, 2001). The tools used include karate uniforms (Gi), mats, stopwatches, visualization boards, and audio recording devices to support the implementation of the intervention.

The first session (Physical) focuses on integrating physical movements with match visualization. Athletes are asked to practice basic movements while imagining real match situations. The methods used include demonstrations, direct practice, and mentoring by trainers. The second session (Timing) aims to train focus and the ability to manage time through a match simulation with a duration that resembles real conditions. Rehearsals are carried out to increase self-confidence and calm when competing.

Indicators of the success of this activity include increasing athlete self-efficacy based on the results of interviews and observations, the ability to visualize in detail and realistically, as well as positive feedback from subjects regarding experiences during training. In addition, there are positive changes in concentration, motivation and exercise performance.

The evaluation method is carried out through direct observation during the implementation of the intervention to monitor the integration of body movements with visualization. Athletes are also asked to write a reflection journal to record experiences, challenges and changes felt during the session. Interviews were conducted after each session to evaluate the subject's understanding and experience, and video recording analysis was carried out to identify strengths and weaknesses in the visualization techniques applied.

### RESULTS AND DISCUSSION

The PETTTLEP Imagery technique intervention with a focus on Physical and Timing aspects was

applied to a karate athlete for two sessions. This program involves physical training combined with mental visualization and setting the duration of movements according to match conditions.

After following the intervention, the subjects showed significant progress. Confidence increases, marked by better mastery of movements and the ability to feel muscle contractions according to technique, so that movements become more precise and focused. Athletes also managed to reduce anxiety, feel more confident, and were able to regulate their movement rhythms more regularly. This progress reflects improvements in both technical and mental aspects that support overall training performance.

The physical aspect of the intervention is focused on visualization of movements combined with real physical sensations, such as muscle contractions when executing a kick or block. Athletes are trained to pay attention to movement details, including body position, hip rotation, and point of contact on the target.

Meanwhile, the Timing aspect involves practicing visualization of movements with a duration that is synchronous with real match situations, such as simulating the execution time of a kick or response to an opponent's attack.

The results of the intervention show that the *PETTLEP Imagery* technique which focuses on Physical and Timing aspects has a positive impact on increasing the self-efficacy of karate athletes.

In the physical aspect, before the intervention the subject felt less confident in the movements carried out and was unsure about the accuracy of his muscle contractions. After being given visualization exercises combined with physical movements, the subjects began to feel more confident in the movements being visualized and were able to feel muscle contractions according to the correct technique. The subject's self-confidence increased, demonstrated by the ability to perform movements with better focus and higher technical accuracy. This is in line with the *PETTLEP* principle, that direct physical involvement can strengthen mental experiences and increase individual confidence in movement performance.

Meanwhile, in the Timing aspect, before the intervention the subject experienced excessive anxiety, fear and lack of confidence in timing movements. After participating in an intervention session involving realistic game time simulations, subjects reported decreased anxiety and increased self-confidence. He was able to regulate his movement rhythms more regularly and showed better self-control during training. The effectiveness of the Timing aspect in *PETTLEP* was proven to help subjects adjust the tempo and duration of movements according to the context of the match, which ultimately increased their mental readiness and self-efficacy.

Overall, these two aspects support each other in forming a more adaptive psychological response, strengthening the perception of self-competence, and reducing emotional disturbances such as anxiety which is often experienced before matches. These findings are consistent with the results of previous research (eg Morone et al., 2022) which stated that *PETTLEP Imagery* was effective in improving motor skills, motivation, and reducing anxiety in athletes.

In general, *PETTLEP Imagery* is an approach designed to thoroughly prepare athletes for competitions or intensive training sessions. This method considers various aspects, including physical conditions, environment, task at hand, implementation time, learning process, emotions,

and point of view. The application of this technique to karate athletes is supported by sports psychology theory which emphasizes the importance of mental and physical readiness to achieve optimal performance (Smith & Bar-Eli, 2007). Training that simulates real competition conditions can help athletes develop better adaptation skills, both physically and mentally.

In this intervention, the techniques applied include physical and timing aspects. In physical techniques, athletes are asked to imagine muscle contractions that correspond to technical movements, such as tensing their leg muscles for a stance or hand muscles when making a punch. In addition, athletes are directed to focus attention on physical details, such as hand movements, eye gaze direction, and body balance. Training is carried out as if the athlete is in a real competition situation.

Before intervention is given, athletes often experience difficulty in maintaining concentration and accuracy of movements when competing, and experience obstacles in managing emotions under pressure. Athletes are also not able to optimize basic techniques, especially in the aspects of body balance and movement coordination, which are very important in competition situations that require fast reactions and well-coordinated movements.

According to Siregar Aisyah, et al. (2023), explosive movements and agility have an important role in improving athlete performance because the ability to move quickly and with precision is needed in sports such as karate. Therefore, an approach is needed that does not only focus on physical aspects, but also on strengthening neural-motor connections through planned visualization techniques.

Physical techniques in the PETTLEP approach (Physical, Environment, Task, Timing, Learning, Emotion, and Perspective) aim to help athletes imagine and feel real movements, by emphasizing the physical sensations involved. In the context of karate, this aspect supports the strengthening of neural-motor connections through realistic simulation of specific movements. Holmes and Collins (2001) stated that visualization activities that involve physical sensations such as muscle contractions and body posture can strengthen motor patterns that are relevant to actual movement. In this way, athletes not only imagine, but also practice the details of the movement in greater depth.

In the second intervention, techniques are applied *timing*. In this session, athletes are asked to do several movements according to a predetermined time, while imagining themselves in the competition arena. Technique *timing* This focuses on the athlete's ability to time movements correctly and respond during training and competition.

Before the intervention was carried out, the athlete still felt that he had not performed optimally. He experienced excessive anxiety and fear when taking part in the competition. Feltz and Lirgg (2001) stated that athletes' limitations in developing their potential can affect performance when competing. In the sport of karate, aspects *timing* is very crucial because it determines the athlete's success in responding quickly and accurately to the opponent's movements.

After receiving engineering intervention *timing*, athletes show improved performance. He feels more confident and is able to execute movements more regularly, as well as showing better mental readiness when facing matches.

The combination of physical aspects and timing provides significant benefits for athletes. Through



the integration of accurate physical movements with precise timing, technique efficiency can be increased, while reaction times are shortened. For example, karate athletes who are trained using this approach are able to respond to their opponent's attacks more quickly and precisely. Apart from improving performance, this training also increases self-confidence because athletes feel more prepared, both physically and mentally, to face the competition.

### CONCLUSION

Engineering training *PETTLEP Imagery* proven effective in reducing anxiety and increasing subjects' self-confidence during training sessions. Significant improvements were seen in the subjects' ability to imagine movements more clearly and feel muscle contractions more precisely, which overall increased their focus and mental readiness and helped athletes hone their neuro-motor connections, increase concentration, and maximize the potential of their movements more fully. This indicates that visualization-based techniques and physical strengthening can be useful tools in preparing athletes mentally. These findings reinforce the literature emphasizing the importance of mental preparedness in sport and suggest that techniques such as *PETTLEP Imagery* can be integrated into training to help athletes achieve best performance. Based on these results, it is recommended that the technique *PETTLEP Imagery* incorporated into athlete training programs to improve the quality of training and athlete performance.

While the *PETTLEP Imagery* technique showed potential in improving self-efficacy, this single-case study cannot be generalized. Further research with control groups and standardized quantitative instruments is essential to establish robust evidence of its effectiveness.

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