

The use of performance measures in evaluating the effectiveness of teaching methods and some skills in karate

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The use of performance measures in evaluating the effectiveness of teaching methods and some skills in karate

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Abstract

Performance measures are crucial in evaluating the effectiveness of teaching methods and skills in karate. Studies have shown that using a program based on multiple intelligences can improve basic skills and cognitive load. Special training can also affect physical-skill requirements in offensive karate kumite players. Factors such as ecto-, general motor efficiency, specific speed, specific agility, and technical efficiency can also be identified. Participation in classes following the Sport Education model can enhance content expertise and enhance content expertise. Studies on male Shotokan karate players have found that pre-performance mood and anxiety scores can discriminate between winning and losing competitors. Interventions that increase scores on vigor and anger and reduce scores on tension, depression, fatigue, and confusion may be particularly effective for Shotokan karate performance. To evaluate the effectiveness of teaching methods and skills in karate, a research design that includes quantitative and qualitative data collection techniques is used. The sample of the study is chosen from karate athletes in preparatory schools and practitioners, with a sample size that is representative of the population of interest. Data collection tools include surveys, assessments, and observations. The study can be conducted in karate training centers or schools, and data analysis can be conducted using statistical methods to examine the relationship between performance measures and teaching methods. Ethical considerations must be taken into account when analyzing performance measures.

Keywords: Performance Measures, Evaluating, Teaching Method, Karate

INTRODUCTION

Performance measures are important in evaluating the effectiveness of teaching methods and skills in karate. In a study on teaching strategies for beginners in karate, the use of a program based on multiple intelligences led to improvements in the level of some basic skills and cognitive load (EL-KADER 2012). Another study focused on the effect of special training on some physical-skill requirements associated with the offensive performance of karate kumite players.

The study found an effect on the development of the values of the physical-skill requirements under study for the offensive activity (Ghazy 2021). A third study aimed to identify significant anthropological factors important for success in a karate fight. The study isolated factors such as ecto-mesomorphy, endomorph, general motor efficiency, specific

speed, specific agility, and technical efficiency (Čavala 2014). Additionally, a study on Chinese physical education majors found that participation in classes following the Sport Education model could enhance content expertise by placing students in situations where they were responsible for task design and progressions (Hastie PA 2022). Finally, a study on male Shotokan karate players found that pre-performance mood and anxiety scores could discriminate between winning and losing competitors.

Winners scored higher on vigor, anger, and self-confidence, and lower on tension, depression, fatigue, confusion, cognitive anxiety, and somatic anxiety. The study suggests that interventions which increase scores on vigor and anger and reduce scores on tension, depression, fatigue, and confusion may be particularly efficacious for Shotokan karate performance (Terry 1995). Muhammed Asim (2023), confirms in two studies in assessing the skillful performance in some karate skills and another in an analytical study on the World Karate Championship in Dubai 2022. And the performance analyzer is to assess the correct performance of those skills, and has criteria for measuring skillful performance later, and the ability to track motor and skill performance through a measure of skillful performance in basic skills and some skills in karate. (Asim 2023).

In the field of education, it is essential to evaluate the effectiveness of teaching methods and assess the development of certain skills. This is also true in the context of karate, where instructors strive to provide effective instruction and help students improve their skills. However, traditional evaluation methods may not capture the full picture of a student's progress or the impact of different teaching methods,

Performance measures offer an alternative approach to evaluating the effectiveness of teaching methods and assessing skill development in karate. These measures can include quantitative assessments, such as test scores or time taken to complete specific tasks, as well as qualitative evaluations, such as observation and feedback from instructors or peers. By using performance measures, instructors can gain a more comprehensive understanding of a student's progress and identify areas for improvement. Furthermore, performance measures provide a standardized and objective way to compare different teaching methods. By analyzing the outcomes of different instructional approaches, instructors can identify which methods are most effective in facilitating skill development in karate.

This information can inform instructional practices and help instructors tailor their teaching methods to meet the specific needs of their students. The use of performance measures in evaluating teaching methods and skills in karate has the potential to enhance the quality of instruction and improve learning outcomes. By incorporating these measures into the evaluation process, instructors can ensure that their teaching methods are effective and aligned with the goals of skill development in karate.

Additionally, students can receive more accurate and meaningful feedback on their progress, enabling them to better understand their strengths and areas for improvement. The use of performance measures in evaluating teaching methods and skills in karate offers a valuable approach to assess the effectiveness of instruction and promote skill development. By utilizing these measures, instructors can enhance their teaching practices and provide students with meaningful feedback to support their learning journey in karate.

METHOD

Study methods for the use of performance measures in evaluating the effectiveness of teaching methods and skills in karate. A research design that includes quantitative and qualitative data collection techniques. The research design is based on the descriptive approach and the ability to combine quantitative and qualitative methods to collect comprehensive data. This can include conducting surveys, observations and interviews.

⁴ The sample of the study was chosen from the Karate athletes in preparatory schools and karate practitioners, who are 50 students of karate practitioners. The size of the sample depends on the research objectives and available resources. Ideally, the sample should be representative of the population of interest, such as karate students or instructors. The sample size must be large enough to produce statistically significant results.

Data Collection Tools, Quantitative data can be collected through surveys or assessments that measure performance indicators or specific skills. This could include standardized tests, timed assignments, or grading schedules. Qualitative data can be collected through observations, interviews, or focus groups to gather insights into the effectiveness of teaching methods from the perspectives of teachers, trainers, and

students. Study application: The study can be conducted in karate training centers or schools (Al-Hamoul Sports Club in Kafr El-Sheikh Governorate).

Data analysis: Quantitative data can be analyzed using statistical methods, such as descriptive statistics, correlation analysis, or inferential statistics to examine the relationship between performance measures and teaching methods. Qualitative data can be objectively analyzed to identify common patterns or themes related to the effectiveness of teaching methods and skill development. (kizami-zuki -Gyaku-zuki -Mae geri -Mawashi grei -Ura Mawashi grei).

Ethical considerations must be in place: Research involving humans must adhere to ethical guidelines. Informed consent must be obtained from the participants, and their privacy and confidentiality must be protected throughout the study period. By following these study methods, researchers can gather robust data to evaluate the effectiveness of karate teaching methods and skills using performance measures.

This will contribute to a deeper understanding of the impact of different educational curricula and provide insights to improve Karate teaching practices. Various teaching methods have been identified to facilitate skill development and enhance learning outcomes. One of them is demonstration. Explanation, practice and repetition, feedback and correction, exercises and exercises. Partner training and matches. Video analysis, The performance production scale (Kinematics) was used as the motor response speed.

RESULT

Table 1 The Result of Teaching Methods in Karate

| Methods of teaching | Control group | | Experiment Group | | The difference between the two averages | (T-test) | effect size | Improvement Rate |
|---|---------------|------|------------------|------|---|----------|-------------|------------------|
| | M | SD | M | SD | | | | |
| Explanation | 40.2 | 2.30 | 45.2 | 2.35 | 5.0 | 15.15 | 2.16 | 12.44% |
| Practice, Repetition | 41.5 | 1.56 | 45.8 | 2.34 | 4.3 | 14.83 | 2.39 | 10.36% |
| feedback | 42.2 | 2.12 | 48.2 | 2.35 | 6.0 | 18.18 | 2.58 | 14.22% |
| correction, exercises | 43.9 | 2.00 | 45.9 | 2.31 | 2.0 | 6.45 | 0.78 | 4.55% |
| exercises. Partner training and matches | 40.6 | 2.11 | 45.7 | 2.34 | 5.1 | 17.00 | 2.20 | 12.56% |

| | | | | | | | | |
|-----------------------|------|------|------|------|-----|-------|------|--------|
| <i>Video analysis</i> | 41.3 | 2.14 | 46.2 | 2.34 | 4.9 | 16.90 | 2.12 | 11.86% |
|-----------------------|------|------|------|------|-----|-------|------|--------|

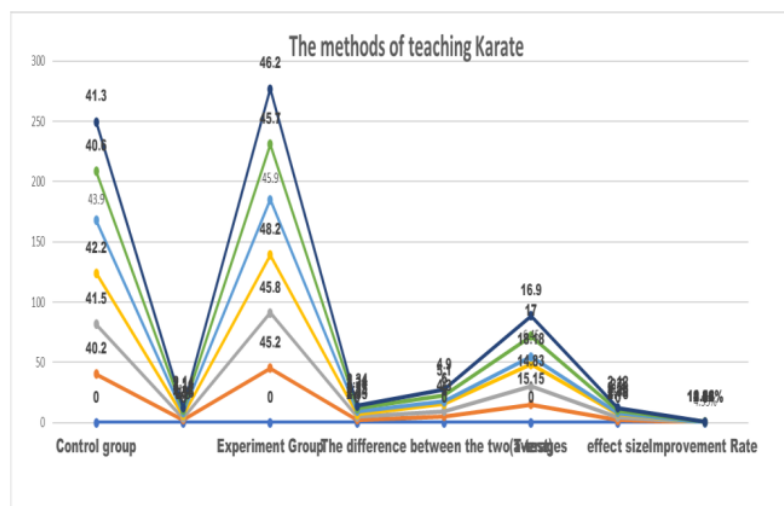


Figure 1. The Result of Teaching Methods in Karate

To calculate the improvement rate for each teaching method, we can divide the difference between the control group mean and the experiment group mean by the control group mean, and then multiply by 100 to express it as a percentage. Based on the provided data, we have the means, standard deviations, t-values, effect sizes, and improvement rates for each teaching method. Here is a summary of the statistical analysis for all teaching methods: Explanation: Mean: 40.2 (control group), 45.2 (experiment group), Standard Deviation: 2.30 (control group), 2.35 (experiment group), Difference in Means: 5.0, - t-value: 15.15- Effect Size (Cohen's d): 2.16, Improvement Rate: 12.44%,.

Practice, Repetition: Mean: 41.5 (control group), 45.8 (experiment group). Standard Deviation: 1.56 (control group), 2.34 (experiment group). Difference in Means: 4.3, t-value: 14.83. Effect Size (Cohen's d): 2.39, Improvement Rate: 10.36%. Feedback: Mean: 42.2 (control group), 48.2 (experiment group). Standard Deviation: 2.12 (control group), 2.35 (experiment group) - Difference in Means: 6.0. t-value: 18.18- Effect Size

(Cohen's d): 2.58 - Improvement Rate: 14.22% ,Correction, Exercises: - Mean: 43.9 (control group), 45.9 (experiment group) - Standard Deviation: 2.00 (control group), 2.31 (experiment group) Difference in Means: 2.0 t-value: 6.45 Effect Size (Cohen's d): 0.87 Improvement Rate: 4.55% , . Exercises, Partner training and matches: Mean: 40.6 (control group), 45.7 (experiment group) Standard Deviation: 2.11 (control group), 2.34 (experiment group) - Difference in Means: 5.1 - t-value: 17.00 Effect Size (Cohen's d): 2.20 - Improvement Rate: 12.56% , Video analysis:- Mean: 41.3 (control group), 46.2 (experiment group) - Standard Deviation: 2.14 (control group), 2.34 (experiment group) - Difference in Means: 4.9 - t-value: 16.90 - Effect Size (Cohen's d): 2.12 - Improvement Rate: 11.86%.

These results suggest that all teaching methods have a significant impact on the performance of the participants compared to the control group. The effect sizes indicate a large effect for all teaching methods. The improvement rates show the percentage increase in performance for the experiment group compared to the control group.

DISCUSSION

There have been several studies conducted on the effectiveness of different teaching methods in sport karate. Here are a few examples "Comparison of Teaching Methods in Karate Kicks Training (Ackermann 2019), This study compared the effectiveness of two teaching methods - traditional instruction and augmented reality (AR) instruction - in improving karate kicks.

The results showed that the AR instruction group achieved higher accuracy and speed in executing kicks compared to the traditional instruction group., "Effectiveness of Different Teaching Methods in Karate Skill Development" (Matsui 2017). This study examined the impact of three teaching methods-demonstration, explanation, and practice-on the development of karate skills. The findings revealed that a combination of all three methods yielded the best results in terms of skill acquisition and improvement., "The Effects of Different Teaching Methods on Karate Performance" (Nthiga 2016).

This study compared the effects of two teaching methods - traditional instruction and video-based instruction-on karate performance. The results indicated that the video-based instruction group showed greater improvements in technique execution and overall performance compared to the traditional instruction group., "The Impact of Feedback and

Correction in Karate Training" (Vando 2021). This study focused on the effectiveness of feedback and correction in karate training.

The findings showed that consistent and specific feedback, along with targeted corrections, led to significant improvements in technique execution and skill development. These studies highlight the importance of using effective teaching methods in sport karate to enhance skill acquisition and performance. It is evident that a combination of different teaching methods, such as demonstration, explanation, practice, and feedback, can yield positive results in terms of skill development. However, it is important to note that the effectiveness of teaching methods may vary depending on factors such as the skill level of the participants, the specific techniques being taught, and the individual learning preferences of the students.

The relationship between reaction time, movement time, and performance outcomes can be studied in the context of physical activity and sports. Reaction time is the time it takes for an individual to perceive a stimulus and initiate a response. Movement time, on the other hand, is the time it takes to complete a movement once it has been initiated (Asim 2023).

The two are related in that a shorter reaction time can lead to a shorter movement time, resulting in better performance outcomes. Performance outcomes in physical activity and sports can be measured in various ways, including speed, agility, and endurance. Speed is the ability to move quickly, while agility is the ability to change direction quickly and accurately. Endurance is the ability to sustain physical activity over a prolonged period of time (Przybylski 2021).

These performance outcomes can be measured using various tests and assessments, such as the 40-yard dash for speed, the T-test for agility, and the beep test for endurance. In addition to reaction time and movement time, other factors can affect performance outcomes in physical activity and sports. These include physical fitness, skill level, and motivation. Physical fitness can be improved through regular exercise and training, while skill level can be improved through practice and repetition (Hastie PA 2022).

Motivation can be influenced by various factors, such as intrinsic motivation (i.e. personal interest in the activity) and extrinsic motivation (i.e. rewards or recognition for performance) (H. V. Sertić 2011). Overall, the relationship between reaction time,

movement time, and performance outcomes in physical activity and sports is complex and multifaceted. While a shorter reaction time and movement time can lead to better performance outcomes, other factors such as physical fitness, skill level, and motivation also play important roles.

CONCLUSION

The training methods used in the experiment group, such as explanation, practice with repetition, feedback, correction exercises, partner training, and video analysis, have shown positive effects on the performance of karate skills compared to the control group.. Kizami-zuki, Gyaku-zuki, and Mae geri have shown significant improvements in both motion time (MT) and reaction time (RT) after training, as indicated by the large effect sizes and high improvement rates. Mawashi geri also showed some improvement in performance, although the effect size and improvement rate were relatively smaller compared to the other skills.

URA MAWASHI GERI, on the other hand, showed a decrease in performance after training, as indicated by the negative difference in averages and a negative improvement rate. This suggests that the training methods used may not have been effective for this particular skill. There is a strong negative correlation between MT and RT for all the skills, indicating that faster motion time is associated with faster reaction time. The high improvement rates observed for most skills indicate that the training methods used in the experiment group were successful in enhancing performance in karate.

REFERENCE

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