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## Analysis of coach's leadership style to optimize karate achievement: Explanatory mixed methods study

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### Abstract

This research aims to determine the coach's leadership style to optimize karate achievement. The research method is descriptive, quantitative, and qualitative. Quantitative data analysis techniques use percentages, and qualitative data analysis techniques use triangulation. The research instruments were the Coaching Behavior Scale for Sport (CBS-S) and interviews. Participants were 50 athletes who were given questionnaires, and the informants were 12 people, consisting of parents and coaches. The results of the quantitative research stated that positive questions included physical training at 78%, technical skills at 86%, mental preparation at 89%, goal setting at 86%, competition strategy at 86%, and participants' positive personal relationships with trainers at 86%, as well as negative trainer questions. Negative Personal Relationship Indicators showed the lowest percentage is 19%. In line with the quantitative results, the qualitative results explain that the coach's role is very influential in optimizing the performance of karate athletes. It was concluded that athletes need optimal support from coach involvement. It can be seen from the quantitative results that coach support has a very significant influence in optimizing karate achievement, which can be seen from the qualitative results. It can provide information to karate martial enthusiasts and practitioners.

**Keywords:** Coach leadership style, karate, athletes' performance

### Introduction

Having the title of coach is a matter of pride in sporting achievements. Sports achievements are an interesting study to discuss. Sports achievements cannot be separated from the role of the coach <sup>[1]</sup>. Therefore, coaches play an important role in realizing brilliant achievements <sup>[2]</sup>. Coaches play a critical role in gauging or framing potentially stressful experiences for athletes, initiating formal conversations about how to address issues, creating learning space, and providing direct guidance on how to address the issue <sup>[3]</sup>. Apart from that, coaches have a role as people who have direct contact with athletes and are essential in optimizing the athletes' expected achievements <sup>[4]</sup>.

Just like achievements in karate, the coach's role is vital. Moreover, karate is a physical contact combat sport <sup>[5]</sup>. So coaches must be able to optimize physical, technical, mental, and appropriate and effective strategies for athletes <sup>[6]</sup>. As a coach, you are responsible for determining and realizing each athlete's achievement targets.

Studies that discuss the physical, technical, and mental aspects of karate martial arts exist. However, studies that discuss the leadership style of karate coaches have yet to receive special attention in previous studies. In empirical terms, only some studies still discuss the sociology of trainer leadership styles. A study by Carlsson & and Lundqvist examined leadership styles in several sports. The results of this study state that the CBS-S questionnaire is a tool for obtaining trainer behavior data. The study's results may help further research on coaching development because the instrument allows coaches to receive feedback on the behavior of athletes and coaches, which is often difficult to understand <sup>[7]</sup>. The same study conducted by Jain and Singht distributed the CBS-S questionnaire to 76 elite athletes, which aimed to evaluate the involvement of coaches in one's sports development in multidimensional aspects of sports <sup>[8]</sup>.

Studies related to coach leadership styles have examined how the effectiveness of coach leadership styles is the key to success in achieving achievements in sports. As a result, coaches must have the expertise to influence and direct athletes <sup>[9]</sup>. Several studies examine coaches' leadership styles by distributing questionnaires related to coach leadership styles. The results of these studies state that coaches have democratic and authoritarian leadership

styles while coaching athlete performance [10, 11, 12]. Another study also examined the correlation between coach leadership style and athlete achievement in the Taekwondo martial arts branch. The study's results stated that coach leadership style positively and significantly correlated with sports achievement [13].

In line with this research, a study in Indonesia that discusses the leadership behavior of coaches, namely a study conducted by Sulistiyono *et al.*, examined the leadership behavior of coaches and parental involvement in developing life skills in adolescent athletes. The study's results stated that the leadership behavior of coaches and Parental involvement has a significant correlation with the life skills of young athletes in developing sports achievements [14].

Some of the studies reviewed only discuss the viewpoint of qualitative analysis, so the data produced does not provide a comprehensive analysis. Previous studies should have interviewed coaches, parents, athletes, and supporting organizations. Then, there is a discussion regarding studies in karate martial arts that specialize in the trainer's leadership style, which has yet to be studied much. Interestingly, the coach's leadership style needs to be assessed based on the coach's behavior to optimize athlete performance.

In this context, this research provides urgency to fill the void in previous research. Research related to coach leadership styles provides a solution to cover previous research, which aims to analyze coach leadership styles to optimize karate performance by conducting research involving athletes and coaches themselves and their parents. These are also exciting topics for more in-depth research using mixed methods (quantitative and qualitative methods). This research will likely provide information regarding the leadership style of karate coaches and provide an evaluation so that management in coaching karate sports can be more optimal.

## Materials and Methods

### Research Types and Designs

The method used in this research is a combined quantitative and qualitative method. With a mixed explanation approach (explanatory mixed method) [20]. This means that the author conducted quantitative research as the primary data. Then, qualitative research will be conducted to reinforce the data. In this research, quantitative and qualitative data will be stored separately, and the results will be integrated at the interpretation stage to obtain a broad and in-depth understanding and evidence [15]. These strategies are relevant to the research topic and provide detailed data to guide desired interventions. The quantitative phase dominates, and interviews complement the quantitative results [16].

### Research Instrument

Data collection techniques are observational, questionnaires, and interviews [17]. The quantitative research instrument is the Coaching Behaviors Scale for Sport (CBS-S) questionnaire [7, 8, 14, 18]. Sports Coach Behavior Scale: The CBS-S measures seven dimensions of coaches' ongoing engagement with athletes in complex training and competition environments. These are physical training and conditioning, technical skills, goal setting, mental preparation, competition strategy, and positive and negative personal relationships. Scores are recorded on a 1-point

Likert Scale based on "very frequently" and rarely" (scores are 1 or 7, ranging from never to always) [8]. Previous research has used this questionnaire, showing that the seven items are good indicators of effective coaching [8, 14].

The qualitative research instrument is the author as the instrument. This research included 50 athletes aged 15-20 years, six coaches, and six athlete parents. The following will present the classification and scores on the trainer leadership style questionnaire:

**Table 1:** Classification of the Coaching Behaviors Scale for Sport Questionnaire Assessment

No.	Classification	Score
1	Always	7
2	Very Frequently	6
3	Often	5
4	Often enough	4
5	Sometimes	3
6	Rarely	2
7	Never	1

### Data Analysis Techniques

The first analysis technique uses quantitative descriptive with percentage analysis [19] which presents the mean, maximum, minimum and standard deviation values, then continued with analysis of the percentage  $P = \frac{f}{N} \times 100\%$ . assisted with the Excel application.

### Information

P = Percentage searched (Relative Frequency)

F = Frequency

N = Number of Respondents.

The second analysis technique uses qualitative descriptive analysis with triangulation [20]. Data collection in this research was conducted through three stages, namely observation, interviews, and conclusion. Observation is a data collection technique that aims to observe and visualize events directly from the behavior of the research subject or the situation in which the event occurs. Interviews are data collection through interviews conducted by asking questions based on questionnaire instruments created by researchers and validated by relevant experts [21]. Researchers describe situations and events that cannot be observed through observation. These three skills are observation (collecting and presenting data), analyzing data, and drawing conclusions [22].

### Research Preparation Stage

1. Document analysis in the form of relevant articles as material for rationalizing the search for theoretical and empirical-based problems
2. Observations at a karate club to dig up information as preliminary research
3. Looking for relevant instruments as research instruments and compiling interview data for the research phase process.

### Research Process Stage

1. The author conducted research at a karate club by giving karate athletes the Coaching Behavior Scale for Sport (CBS-S) questionnaire to fill out.
2. On a different day, the author conducted interviews with karate athletes with questions focused on whether

- the coach's leadership style helped improve performance
- Furthermore, the author interviewed parents and coaches on the same day as qualitative supporting data.

- The author conducted data reduction and concluded from the data obtained through qualitative data collection.

**Final Research Stage**

- The author conducted data processing from quantitative results using the Excel application to find out the percentage results

**Results**

Below will be presented quantitative results, namely in the form of a descriptive analysis of the trainer's leadership style.

**Table 2:** Results of Descriptive Analysis of Coach Leadership Style

No	Information	Indicator						
		Physical training	Technical Skills	Mental Preparation	Goal Setting	Competition Strategy	Personal Relationships: Positive	Personal Relationships: Negative
1.	Mean	38.24	48.26	31.02	36.26	42.94	36.16	10.36
2.	Maximum	46	56	35	42	49	42	22
3.	Minimum	22	22	9	20	22	6	8
4.	Std. Deviation	6.68	8.32	5.51	6.52	7.32	7.32	3.01

Based on the quantitative descriptive analysis table with these percentages, it is known that the Mean Physical Training is 38.24, the Mean Technical Skills is 48.26, the Mean Mental Preparation is 31.02, the Mean Goal Setting is

36.24, the Mean Competition Strategy is 42.94, The Mean Positive Personal Relationship is 36.16, and the Mean Negative Personal Relationship is 10.36.

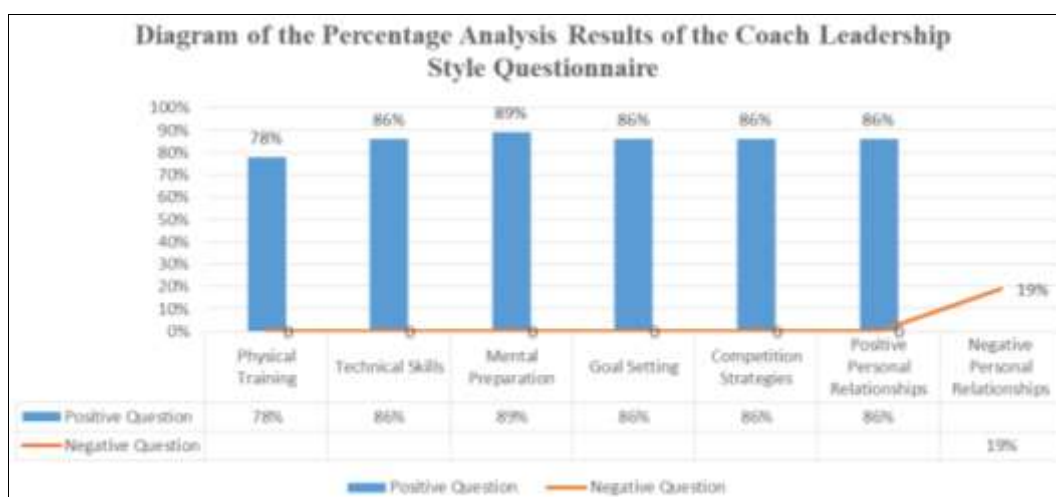
**Table 3:** Percentage Analysis Results of Coach Leadership Style

No.	Indicator	F	N	Max score	Amount	F. Max	(%)
1.	Physical training	7	50	350	1912	2450	78%
2.	Technical Skills	8			2413	2800	86%
3.	Mental Preparation	5			1551	1750	89%
4.	Goal Setting	6			1812	2100	86%
5.	Competition Strategy	7			2097	2450	86%
6.	Personal Relationships: Positive	6			1808	2100	86%
7.	Personal Relationships: Negative	8			518	2800	19%
Total		47					

Based on the percentage analysis table, it is known that the CBS-S questionnaire has seven indicators, and each indicator has a different number of questions with a maximum score of 350 per question. The results of the questionnaire, which was distributed to 50 respondents, showed that the positive questions, including Physical Training, had a percentage of 78%, Technical Skills at 86%, Mental Preparation at 89%, Goal Setting 86%, Competition Strategy 86% and Positive Personal Relationships of Trainers 86%, as well as negative questions from the

Coach's Negative Personal Relationships indicator showed the lowest percentage, namely 19%.

The results of positive questions show high results ranging from 75% to 89%, which means that the athlete considers the coach's behavior and coaching in optimizing athlete performance reasonable. Moreover, the negative questions showed low results, namely 19%, which means that coaches rarely conduct negative coaching attitudes or behavior while optimizing athlete performance. Thus, positive coach behavior is vital in the process of optimizing the performance of karate athletes.



**Fig 1:** Percentage Analysis Diagram of Coach Leadership Style

The research results are presented in a diagram as in the picture above. Positive questions are depicted on a blue bar chart, and negative questions are depicted on an orange line, so there is a difference between the results.

## Discussion

### (1) Physical Exercise

Answers from coaches, athletes, and parents: "The athlete's physical training program has conducted the athlete's physical training. Physical conditioning has not been conducted in writing, but looks at the athlete's condition during training and the schedule of the closest matches the athlete will participate in."

Based on quantitative and qualitative analysis, the author can explain that the physical training management provided by the trainer is appropriate. However, it is necessary to note that the physical training has yet to be planned in writing, even though the implementation is exemplary. As a result, physical training is conducted in a way that needs to be written down or organized correctly. Physical conditioning in sports is vital, especially in martial arts, where specific weight categories and physical conditioning conditions are used for competition <sup>[23]</sup>. This, of course, requires improvement in the training program planning aspect in order to get maximum results. To improve the physical quality of athletes in order to be able to compete with opponents, athletes must strive to improve their technical and physical qualities <sup>[24]</sup>.

Coaches must consider physical factors to improve athlete performance <sup>[25]</sup>. In achieving optimal physical condition, athletes, in particular, become the center of attention in improving athletes' physical condition. Improving the physical quality of athletes needs to go in a better direction so that in the future, what they do will be even better <sup>[19]</sup>. In achieving good results, this must be connected to cooperation between coaches and athletes in improving physical condition <sup>[25]</sup>.

### (2) Technical skills

Athletes' interview answers regarding the technical skills of the coach, statements from all athletes and athletes' parents said, "Coaches have good technical skills and are intelligent in optimizing athlete performance. Coaches know and master the athletes' techniques, tactics, physical and mental abilities." The answer to the interview with the trainer said: "In terms of skills, a coach must have knowledge and mastery of the athlete's techniques, tactics, physical and mental abilities. Besides that, coaches must also have many strategies to optimize athletes' opportunities for achievement."

Based on quantitative and qualitative analysis, the author concludes from the interview results that the coaches at the club seem to have mastered all technical skills, such as technique, tactics, and physical and mental control of athletes. It is just that the athlete's training program needs to be written better, as a result, the training carried out cannot be seen whether the athlete's performance declines in writing. Technical skills interpret the coach as an indicator of an athlete's success in achieving achievements <sup>[26]</sup>.

Coaches must consider all positive and negative factors that will arise at any time. Therefore, the quality of training and communication programs must be adapted to the athlete's condition, both individually and collectively, as well as to the environment and personality of the athlete <sup>[27]</sup>.

Therefore, appropriate training programs must be developed and well structured <sup>[28]</sup>.

### (3) Mental preparation

Interview answers from athletes, coaches, and parents said the same thing regarding athletes' mental preparation, namely: "The mental training that the coach has implemented includes managing or controlling athletes' emotions, getting athletes used to continuing to think positively, getting athletes used to dealing with failures and mistakes without emotion both during training and matches and learning to accept match results for evaluation in the next match."

Based on quantitative and qualitative analysis, the author can explain that player mental control management has been successfully implemented. It is reflected in the athlete's behavior before, during, and after the match. Mental preparation strengthens willpower, controls emotional stability, develops thinking, attitudes, and behavior, and improves athlete performance <sup>[29]</sup>. High mental strength is developed through positive encouragement from a coach, where support, guidance, and fighting spirit will give birth to peak performance <sup>[3]</sup>.

To prepare mentally, coaches must prepare athletes mentally well because mental function is the function of controlling, directing, commanding, and instructing the implementation of motor activities. Athletes with a good mentality will optimize good and maximum performance. The mental training throughout the match only results in the fact that the coach's role is weighty. In this case, it must be situational, whereas to win, the role of the athlete's mental coach is very necessary <sup>[30]</sup>.

### (4) Goal Determination

Interview answers from athletes, coaches, and parents said the same thing regarding coach goal setting: "The goal setting that the coach has implemented strategies so that the coach focuses on the goal, namely achieving maximum performance in every training and match, always monitoring the athlete's progress and providing full support for the athlete in achieving his goals."

Based on quantitative and qualitative analysis, the author can explain that the management of trainer goal setting has been conducted very well. Judging from the results, the trainer's initial goal setting is training goals to encourage athletes to focus on achieving their training goals, ignore distractions and expectations, and seek help from the people around them who can support them in achieving their training goals <sup>[31]</sup>. Goal setting motivates athletes to achieve something during training and competition <sup>[32]</sup>. The more complicated the goal to be achieved, the more complex the athlete must work to achieve it.

### (5) Competition strategy

Interview answers regarding the competition strategies of coaches, athletes, and parents said the same thing: "The competition strategy that the coach has implemented includes getting used to and ensuring that athletes are focused before the match, getting athletes used to remaining calm in all situations during the match, evaluating and minimizing obstacles that have been experienced during previous matches and ensuring that all athletes' match facilities are good."



Based on quantitative and qualitative analysis, the author can explain that the competition strategy implemented by the coach is effective for the athlete's goals and abilities. In this case, the coach has implemented the best strategy for each athlete. Accuracy in implementing strategies depends on the athlete's training, adaptation to his abilities, and mastery of basic skills [26]. Strategy is a global approach associated with predetermined planning. The strategy aims to win the match [33]. Therefore, the coach desires to have a good understanding of match strategy, especially the opponent's strengths and weaknesses, finalize every solution of the applied competition strategy, and use various methods and strategies to deal with different opponents [34].

#### (6) Personal Relationships: Positive

Interview answers from athletes and parents said that: "The trainers at the Dojo have outstanding personalities in educating all athletes, are very close to athletes and athletes' parents, do not show favoritism towards athletes, care and can provide any solutions to all the obstacles experienced by athletes."

Meanwhile, a statement from the coach himself said that: "the coach tries to be a good example for all athletes, cares and tries to be a comfortable place for athletes and always maintains close ties with all athletes and athletes' parents, providing solutions to the obstacles experienced by athletes."

Based on quantitative analysis, which shows high and qualitative results, the author can explain that athletes need positive personal relationships with coaches during training and matches. As a result, athletes will obey the coach's instructions and orders. Most of the time, athletes are at the training ground; for this reason, the coach's role is the same as that of parents at home.

As in research by Sari *et al.*, athletes enjoy receiving special attention from their coaches before, during, and after competitions [3]. The coach's positive behavior will become a model that can be used as input for athletes later becoming coaches [35]. Active support from coaches plays a vital role in helping young athletes learn through specific strategies and support that helps athletes learn, giving young athletes a positive perspective on their experiences. Positive support from a coach helps athletes feel capable of facing and overcoming critical situations.

#### (7) Personal Relationships: Negative

The athlete's interview answer stated, "The coach does not show a negative personality in front of all athletes either during training, outside of training, or in matches. It is just that during training and matches, coaches will be more strict in their behavior and speech, but this firmness makes athletes more disciplined."

Moreover, the same thing was said by the coach and parent of the athlete: "Some athletes may think that the shouting that the coach makes during training is a negative characteristic of the coach, even though the coach's intention is not to shout without meaning, but rather to educate and train athletes to be more disciplined during training to get used to hard training and make athletes mentally strong. "Because no coach wants to teach traits and develop their athletes through bad things, all coaches want to educate and teach good things."

Based on quantitative and qualitative analysis, the author can explain that negative personal relationships show little

result, which means that coaches rarely show their negative traits. In the athlete's opinion, all the traits that emerge from the coach aim to educate discipline and improve the athlete's thinking ability. Correlations between athletes and coaches could be more successful and sustainable. Harmful methods applied in the teaching process also improve the correlation between coaches and athletes. Harmful methods such as cautious, administrative, and aggressive preparation are attempts by coaches to realize personal desires through athletes who are prepared with little regard for injuries, weaknesses, or difficulties that the athlete can see [36].

#### Conclusion

This research examines the leadership style of coaches in optimizing athlete performance. Based on the results and discussion, the coach's leadership style has a significant effect on optimizing athlete performance. Assessing the perspectives of athletes, coaches themselves, and parents of athletes regarding coach leadership is vital as a material for reflection and evaluation of sporting achievements. Athletes need optimal support from coach involvement. Coach support has a very significant effect on optimizing karate performance. It can provide information to karate martial enthusiasts and practitioners. However, it is necessary to understand the limitations of this research, namely that this research only focuses on the karate martial arts branch with an explanatory type of research and a more comprehensive approach based on mixed methods is needed to obtain more empirical facts from this research. Therefore, further research needs to be conducted in a more in-depth manner so that it can cover the gaps in the author's research.

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