



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 15, Issue, 08, pp.25566-25572, August, 2023
DOI: <https://doi.org/10.24941/ijcr.45848.08.2023>

RESEARCH ARTICLE

INFLUENCE OF COOPERATIVE LEARNING ON FIGHTING PERFORMANCE OF SANDA ATHLETES

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ARTICLE INFO

Article History:

Received 19th May, 2023
Received in revised form
15th June, 2023
Accepted 17th July, 2023
Published online 30th August, 2023

Key words:

Cooperative Learning, Sanda, Physical Education.

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ABSTRACT

Sanda is a competitive sport that requires teamwork, especially among student-athletes. A number of courses that call for in-class student participation and teamwork have been related to the idea of cooperative learning. This correlation research aimed to discover the association between cooperative learning attitude and fighting performance among Sanda student-athletes, as well as a qualitative aspect that explored teacher practices in cooperative learning. One hundred twenty-two participants were surveyed using a researcher-made tool (Cronbach alpha > 0.90) and 5 teachers were purposefully interviewed. Informed consent was secured during the process of data collection. The results of the survey show that there is a high level of cooperative learning (Mean =2.54, SD = 0.27) in the domains of teamwork (Mean =2.55, SD = 0.46), peer support (Mean =2.50, SD = 0.48), and positive interdependence (Mean =2.58, SD = 0.49). On the other hand, fighting performance (Mean =2.50, SD = 0.25) was seen at high levels in the domain of self-confidence (Mean =2.56, SD = 0.46) but perceived as low in the domain of motivation (Mean =2.50, SD = 0.43) and concentration (Mean =2.43, SD = 0.50). Practices to ensure cooperative learning were structured training methods, positive relationships amongst students, partner rotations to encourage collaborative exercises, learning from one another, and effective communication. Strategies to improve cooperation include mentorship programs, conducting in-house competitions, team-building activities, mixed-level training, and cooperative training sessions. Correlation tests revealed that there is a significant correlation between cooperative learning and fighting performance ($r = -0.2181, p < 0.05$).

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Citation: Huang Xinheng and Gatbonton, Ryan Ray. 2023. "Influence of Cooperative Learning on Fighting Performance of Sanda Athletes". *International Journal of Current Research*, 15, (08), 25566-25572.

INTRODUCTION

Sanda is a competitive sport with a need for cooperation, especially among the students. The concept of cooperative learning has been linked to several courses that requires in-class student collaboration and teamwork. However, rarely is there a study that linked cooperative learning with mixed martial arts—in this case, Sanda. Cooperative learning is the ability of the students to learn in groups and collaborate with other members of their team or classroom in order to acquire the desired skillset they need. According to Palmer *et al.* (2018), Cooperative learning involves students working together to achieve common goals, and this sense of interdependence motivates group members to assist and support one another. When students collaborate, they learn to listen to others, offer and receive aid, settle disagreements, and solve issues democratically. The teacher's role in developing cooperative learning in the classroom is vital to its effectiveness. This includes understanding how to structure cooperative learning in groups, including their size and composition, the type of task assigned, student behavior expectations, individual and group responsibilities, and the teacher's role in monitoring both the process and the outcomes of the group experience (Yang *et al.*, 2021).

Not much is known about Sanda and Sanda athletes despite having so many improvements in the subject over the years. This research bridged the existing gap by providing knowledge and information regarding the sport. In line with this, the current study aimed to assess the factors that influence cooperative learning of Sanda athletes and their performance in fighting classes. It identified if the profiles of the students such as their age, gender, or year level are a significant factor that contributes to differences in students' fighting performance and their cooperative learning ability. The research also determined if there is a relationship between the athletes' fighting performance and their cooperative learning.

Background of the Study: Sanda is a sport that changes the intensity of exercise on a regular basis. During the tournament, opposing participants conduct freehand movements such as kicking, playing, and tossing depending on certain regulations. Athletes must apply their physical fitness, methods, and strategies, exercise knowledge, and strong attitude throughout the process. Sanda matches are made up of three rounds, each lasting three minutes with one-minute rest in between. Athletes must master all abilities and techniques during the competition. Athletes must be intensely concentrated in order to deal

with the many changes on the field, and they must have a strong feeling of counterattack (He, 2018).

Cooperation is something that is barely talked about when it comes to martial arts. Other individual attributes like skillset, strength, motivation, and knowledge may be linked to martial arts, but there has not been any study that checked the influence of cooperative learning on fighting performance of martial art students—more so, Sanda athletes in the case of this study. Considering this, the present research aimed to bridge that gap by conducting a study to determine the influence of cooperative learning on the performance of Sanda athletes.

Statement of the Problem: This study assessed the extent of cooperative learning and fighting performance of students in Xinyang Normal University, Xinyang City of Henan Province, China; and proposed an output for improving cooperative learning among Sanda athletes. Specifically, it sought answers to the following questions:

- What is the profile of the respondents in terms of:
 - Sex
 - Age
 - Year Level
 - Years of Involvement in Sanda
- What is the Assessment of cooperative learning of Sanda athletes in terms of the following indicators:
 - Teamwork
 - Peer Support
 - Positive Interdependence
- Is there a significant difference in the assessment of the cooperative learning when compared according to their demographic profile?
- What is the assessment of the fighting performance of Sanda athletes in terms of the following indicators:
 - Self-Confidence
 - Motivation
 - Concentration
- Is there a significant difference in the assessment of the fighting performance of Sanda athletes' when compared according to their demographic profile?
- Is there a significant relationship between the level of cooperative learning and fighting performance of Sanda athletes?
- What practices implemented by teachers are helpful in following cooperative learning among Sanda athletes?
- Based on the study findings, what action plan can be developed to improving cooperative learning and fighting performance of Sanda athletes?

Significance of the Study:

This study will benefit the following

Sanda athletes and martial arts students: This research will provide Sanda athletes insight to what their teachers think about their cooperative learning ability and fighting performance. Subsequently, the findings from this paper will help them enhance their cooperative learning skills, work together, and increase their motivation level.

Sanda and mixed martial arts teachers: Sanda teachers will benefit from this study as they will have more knowledge resources to improve their teaching techniques in Sanda classes.

Future Researchers: The research can also be of benefit to future researchers who aim to understand the relationship between cooperative learning and performance of martial art athletes, specifically, Sanda athletes.

Scope and Delimitation of the Study: This study examined the relationship between teachers' assessment of the cooperative learning and fighting performance of Sanda athletes in Xinyang Normal

University. As samples for this study were picked from the intended locale, the respondents in this study were the 120 Sanda and martial arts athletes from Xinyang Normal University. Time constraints and the chosen locale were the primary limitations since the current study was conducted within two months only, and the researcher collected the data from the Philippines while the respondents are based in China.

Theoretical Framework: The current research concept was anchored on the social interdependence theory, whose origins trace back to the early 1900s, when Kurt Koffka (one of the Gestalt School of Psychology's founders) claimed that groups were dynamic wholes with varying interdependence among individuals. Kurt Lewin refined Koffka's concept in the 1920s and 1930s, proposing that the essence of a group is the interdependence among members (created by common goals), and that interdependence results in the group being a 'dynamic whole.' According to Johnson and Johnson (2021), 'social interdependence' emerges when people have shared goals and their outcomes are influenced by the actions of others. It differs between social dependency (in which one person's results are impacted by the activities of another person but not vice versa) and social independence' (in which individuals' outcomes are unaffected by each other's actions). Social interdependence is classified into cooperative and competitive. Cooperation occurs when individuals work together to achieve common goals. Individuals' successes are positively connected when a situation is cooperatively organized; individuals think that they can meet their goals if and only if the others in the group also reach their goals. As a result, individuals seek outcomes that benefit everyone with whom they collaborate. Competition occurs when individuals strive against one another to pursue a goal that only one or a few can reach. Individuals' objective successes are negatively associated when a scenario is organized competitively; each individual feels that when one person accomplishes his or her goal, all others with whom he or she is competitively linked fail to reach their goals (Johnson & Johnson, 2021). Sanda is generally a competitive sport, but by using the social interdependence theory, the researcher aims to link cooperativity to the competitive nature of Sanda sports so as to determine the relationship between this link, and the influence on the fighting performance of the athletes.

METHODOLOGY

The foregoing describes the research design, locale, sampling technique, the data collection procedure, and the statistical data analysis.

Research Locale: Xinyang Normal University was established in 1975 as the Xinyang Branch of Kaifeng Normal University (now Henan University). The State Council accepted it as an undergraduate college in 1978, and the name was changed to its current one. It became an approved master's degree unit in 1998 and is presently an authorized doctoral degree project construction unit in Henan Province.

Research Design: The researcher used the descriptive method to access the level of the students' cooperative learning and fighting performance as assessed by their teachers; the comparative method to describe the differences when profiles are taken as test factors; and the correlational method to explore the significant correlation between the two variables.

Sample and Sampling Technique: This research was conducted among Physical Education students of Xinyang Normal University who are specializing in teaching Sanda. In the school, there are 120 athletes taking up Sanda. The research ensured the participation of the total athlete population in the current study. Five teachers were purposefully selected to take part in the interviews. The criteria for selecting the teacher respondents were as follows: They must be from the Physical Education Department; a director of the college, a subject teacher, administrative directors of the college, or any active teaching personnel who is involved in impacting the Sanda athletes' knowledge; and have good knowledge of the students.

Data Gathering Procedure: The researcher sent a letter of request to the president of Xinyang Normal University asking for permission to conduct this study. Upon the president's approval, the questionnaires were distributed to the student-athletes. After the respondents completed the questionnaire, the researcher consolidated and analyzed the data to make further discussions of the study findings. The proposed output from this study was presented to Xinyang Normal University starting from August 2023 to the end of the school year.

Statistical Analysis of Data: In the data analyses procedure, the research used the following statistical treatments. The package/software used for the statistical analyses is Statistical Package for Social Sciences (SPSS) software.

Frequency Count and Percentage: In analyzing the profile of the student respondents, the research used frequency count and percentages to assess the result collected in terms of age, sex, and year level of the respondents.

Arithmetic and Composite Mean: The research used the arithmetic mean for the assessment of each of the items or statements on the cooperative learning and fighting performance indicators.

T-test /ANOVA: The t-test was used by the researcher to determine if there is a significant difference in level of cooperative learning and fighting performance based on sex while ANOVA was used for the variables age and year level.

Pearson's r Correlation Analysis: The researcher used Pearson's *r* correlation analysis to determine the significant relationship between the indicators of cooperative learning and the fighting performance of Sanda athletes.

Thematic Analysis: This technique was used to analyze the qualitative data that will be collected from the interviews of teachers.

Decision Criteria: The 0.05 level of significance was used for the hypothesis analysis. If the computed significance value was larger than the set value of 0.05, the null hypothesis was accepted; otherwise, it was rejected.

RESULTS

The forgoing presents the results gathered from the study and their corresponding analyses.

Demographic Profile of the Respondents: The respondents' demographic profile is summarized in table 1.

Table 1. Demographic Profile of the Respondents

| Category | Frequency | Percentage (%) |
|-----------------------------|-----------|----------------|
| Sex | | |
| Male | 63 | 52.50 |
| Female | 57 | 47.50 |
| Age | | |
| 18–19 years old | 27 | 22.50 |
| 20–21 years old | 37 | 30.83 |
| 22–23 years old | 28 | 23.33 |
| 24 years old and above | 28 | 23.33 |
| Year Level | | |
| Freshmen | 28 | 23.33 |
| Sophomore | 31 | 25.83 |
| Junior | 31 | 25.83 |
| Senior | 30 | 25.00 |
| Years of Involvement | | |
| 1–3 years | 98 | 81.67 |
| 4–6 years | 21 | 17.50 |
| 7–9 years | 1 | 0.83 |

Assessment of Cooperative Learning: The respondents' level of cooperative learning of Sanda sport was assessed in terms of

teamwork, peer support, and positive interdependence. The findings are presented in table 2.

Tables 2 and 3 explain teamwork as a factor of cooperative learning. Table 2 showed a composite mean of 2.55 with a standard deviation of 0.46, which can be interpreted as having a high level of cooperative learning. Based on the responses of the participants, teamwork is the second highest factor that contributed to the level of cooperative learning.

All the items under teamwork were interpreted as high level except for item 3, which was interpreted as low level. This reinforces the values of teamwork whereby the teams' inputs translate into team outputs leading to team effectiveness, task completion and satisfaction (Driskell *et al.*, 2018). Table 3 shows that peer support as a factor of cooperative learning had a mean total of 2.50 with a standard deviation of 0.48, which can be interpreted as having a low level of cooperative learning. Based on study findings, peer support is the lowest factor that contributed to the level of cooperative learning, which is 0.08 and 0.05 lower than positive interdependence and teamwork, respectively. This low level of cooperative learning indicates that the respondents might not be eager to support others in the class, as the presence of peer support is an important resource that helps burnout and engagement—and the lack of it results in further burnout, discouragement, and disengagement (Lee *et al.*, 2021).

Table 4 shows that positive interdependence as a factor of cooperative learning had a mean total of 2.58 with a standard deviation of 0.49, which was interpreted as high level of cooperative learning. Based on the study results, positive interdependence is the highest factor that contributed to the level of cooperative learning, which is 0.03 and 0.08 higher than teamwork and peer support, respectively. Table 5 reveals that cooperative learning had a mean overall total of 2.54 with a standard deviation of 0.27, which was interpreted as a high level of cooperative learning. Based on study findings, the mean of overall cooperative learning was lower than the means of positive interdependence and teamwork by 0.04 and 0.01, respectively, and was higher than the mean of peer support by 0.04. The high levels of teamwork and positive interdependence contributed to the high levels of overall cooperative learning as well as the low levels of peer support.

Difference in Cooperative Learning among Demographic Profile:

The assessment of cooperative learning revealed the overall responses of the student-athletes in the survey. To further explore the difference in their responses with regard to teamwork, peer support, positive interdependence, and overall cooperative learning, their responses were assessed in relation to their demographic profile of sex, age, year level, and years of involvement as illustrated in table 6.

The demographic profiles had *p*-values of 0.5527, 0.9872, 0.4360, and 0.6202, respectively. There were no significant differences between the student-athletes' assessment of cooperative learning in terms of teamwork and demographic profiles of sex, age, year level, and years of involvement as their *p*-values were higher than 0.05.

Assessment of Fighting Performance: The respondents' level of fighting performance was assessed in terms of self-confidence, motivation and concentration. The succeeding tables show the findings, which demonstrated the mean, standard deviation, and interpretation of each item investigated. Table 7 describes self-confidence as a factor of fighting performance had a mean total of 2.56 with a standard deviation of 0.46, which was interpreted as high level of fighting performance. Based on the study results, self-confidence is the highest factor that contributed to the level of fighting performance, which is 0.06 and 0.13 higher than motivation and concentration, respectively. Table 8 shows motivation as a factor of fighting performance had a mean total of 2.50 with a standard deviation of 0.43, which is interpreted as a low level of fighting performance. Based on the responses of the participants, motivation was the second highest factor that contributed to the level of fighting performance, which was 0.06 lower than self-confidence and 0.07 higher than concentration.

Table 2. Cooperative Learning in Terms of Teamwork

| Indicators | Mean | SD | Interpretation | Rank |
|---|------|------|----------------|------|
| 1. We make sure that everyone in the group learns the assigned material. | 2.58 | 1.14 | High Level | 3 |
| 2. The job is not finished until everyone in the group has completed the assigned task. | 2.61 | 1.10 | High Level | 1 |
| 3. Everyone in the group has to share knowledge or materials with other team members. | 2.38 | 1.16 | Low Level | 6 |
| 4. Everyone's ideas are needed if they are going to be successful. | 2.58 | 1.13 | High Level | 3 |
| 5. We receive bonus points if everyone scores above a certain criterion. | 2.60 | 1.12 | High Level | 2 |
| 6. We tend to learn better when we work together as a team. | 2.55 | 1.06 | High Level | 5 |
| COMPOSITE MEAN | 2.55 | 0.46 | High Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 3. Cooperative Learning in Terms of Peer Support

| Indicators | Mean | SD | Interpretation | Rank |
|---|------|------|----------------|------|
| 1. The teammates in Sanda classes think it is important for them to be friends. | 2.43 | 1.14 | Low Level | 5 |
| 2. Members of each team like each other the way they are. | 2.53 | 1.13 | High Level | 3 |
| 3. The teammates in Sanda classes care about each other's feelings. | 2.57 | 1.11 | High Level | 2 |
| 4. Each member of the team encourages each other to be the best they can be. | 2.59 | 1.12 | High Level | 1 |
| 5. The teammates work together to create coordination | 2.46 | 1.10 | Low Level | 4 |
| 6. While working in teams, the team prioritizes cooperation over individual brilliance. | 2.40 | 1.14 | Low Level | 6 |
| COMPOSITE MEAN | 2.50 | 0.48 | Low Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 4. Cooperative Learning in Terms of Positive Interdependence

| Indicators | Mean | SD | Interpretation | Rank |
|--|------|------|----------------|------|
| 1. We interact with each other more positively while working together. | 2.56 | 1.13 | High Level | 4 |
| 2. We understand that their roles are complementary and interconnected in the group. | 2.53 | 1.13 | High Level | 5 |
| 3. We enjoy cooperative learning activities more than competition and individual learning. | 2.60 | 1.16 | High Level | 2 |
| 4. We feel happy about the success of the group even if they're not the best individual performer. | 2.67 | 1.16 | High Level | 1 |
| 5. We value the contributions of the other members of their group. | 2.53 | 1.11 | High Level | 5 |
| 6. We assist each other while practicing the assigned tasks. | 2.58 | 1.19 | High Level | 3 |
| COMPOSITE MEAN | 2.58 | 0.49 | High Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 5. Summary of Means for Cooperative Learning

| Indicators | Mean | SD | Interpretation | Rank |
|--------------------------|------|------|----------------|------|
| Teamwork | 2.55 | 0.46 | High Level | 1 |
| Peer Support | 2.50 | 0.48 | High Level | 3 |
| Positive Interdependence | 2.58 | 0.49 | High Level | 2 |
| Overall Mean | 2.54 | 0.27 | High Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 6. Difference in the Student-Athletes' Assessment of the Cooperative Learning According to Demographic Profile

| Profile | p-value | t-value | Interpretation |
|-------------------------------------|---------|---------|---------------------------|
| Teamwork | | | |
| Sex | 0.5527 | 0.5954 | No significant difference |
| Age | 0.9872 | 0.05 | No significant difference |
| Year level | 0.4360 | 0.92 | No significant difference |
| Years of involvement | 0.6202 | 0.48 | No significant difference |
| Peer Support | | | |
| Sex | 0.7599 | 0.3063 | No significant difference |
| Age | 0.1319 | 1.91 | No significant difference |
| Year level | 0.1722 | 1.69 | No significant difference |
| Years of involvement | 0.1861 | 1.71 | No significant difference |
| Positive Independence | | | |
| Sex | 0.4066 | -0.8328 | No significant difference |
| Age | 0.1289 | 1.93 | No significant difference |
| Year level | 0.9153 | 0.17 | No significant difference |
| Years of involvement | 0.0619 | 2.85 | No significant difference |
| Overall Cooperative Learning | | | |
| Sex | 0.9712 | 0.0362 | No significant difference |
| Age | 0.5917 | 0.64 | No significant difference |
| Year level | 0.3277 | 1.16 | No significant difference |
| Years of involvement | 0.3834 | 0.97 | No significant difference |

*A p-value < 0.05 is considered significant.

Table 7. Fighting Performance in Terms of Self-Confidence

| Indicators | Mean | SD | Interpretation | Rank |
|--|------|------|----------------|------|
| 1. We are confident that what they learn in Sanda classes will benefit them as professionals | 2.58 | 0.99 | High Level | 3 |
| 2. We are not scared to face opponents in Sanda fights. | 2.62 | 1.15 | High Level | 2 |
| 3. We depend on their abilities, strengths, and skills. | 2.64 | 1.15 | High Level | 1 |
| 4. Even when it is difficult to master a skill, we believe that we can learn it. | 2.40 | 1.12 | Low Level | 6 |
| 5. We believe that they have what it takes to be at the top of their game. | 2.54 | 1.11 | High Level | 5 |
| 6. We are confident when given tough challenges in Sanda classes. | 2.57 | 1.13 | High Level | 4 |
| COMPOSITE MEAN | 2.56 | 0.46 | High Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 8. Fighting Performance in Terms of Motivation

| Indicators | Mean | SD | Interpretation | Rank |
|---|------|------|----------------|------|
| 1. We put our best effort even when faced with the most difficult challenges. | 2.48 | 1.12 | Low Level | 5 |
| 2. In the face of defeat, we rather feel encouraged than feel defeated. | 2.49 | 1.10 | Low Level | 4 |
| 3. We have the best team and teachers who encourage them to keep going. | 2.38 | 1.13 | Low Level | 6 |
| 4. We inspire each other to be the best. | 2.50 | 1.20 | Low Level | 3 |
| 5. We believe that if they try hard enough, they will be hard to beat. | 2.53 | 1.08 | High Level | 2 |
| 6. We are eager to face new Sanda opponents. | 2.61 | 1.09 | High Level | 1 |
| COMPOSITE MEAN | 2.50 | 0.43 | Low Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Table 9. Fighting Performance in Terms of Concentration

| Indicators | Mean | SD | Interpretation | Rank |
|--|------|------|----------------|------|
| 1. We focus on developing themselves, their skills, and abilities. | 2.43 | 1.15 | Low Level | 3 |
| 2. We have too many tasks that overwhelms us. | 2.70 | 1.11 | High Level | 1 |
| 3. We feel discouraged when we look at our colleague's best performances. | 2.32 | 1.17 | Low Level | 5 |
| 4. We are focused on winning even after coming out of a loss. | 2.58 | 1.14 | High Level | 2 |
| 5. While fighting, we can implement the techniques they learned during practice. | 2.18 | 1.17 | Low Level | 6 |
| 6. My performance improves every day. | 2.39 | 1.08 | Low Level | 4 |
| COMPOSITE MEAN | 2.43 | 0.50 | High Level | NA |

1.00 – 1.75/very low level; 1.76 – 2.50 low level; 2.51 – 3.25 high level; 3.26 – 4.00 very high level

Concentration as a factor of fighting performance is shown in table 9, having a mean total of 2.43 with a standard deviation of 0.50, which was interpreted as low level of fighting performance. Based on study findings, concentration was the lowest factor that contributed to the level of fighting performance, which was 0.13 and 0.07 lower than self-confidence and motivation, respectively. The results of the survey revealed that the respondents had low concentration or lower ability to concentrate on essential inputs towards their Sanda sport career.

Differences in Fighting Performance among Demographic Profile:

There were no significant differences between the student-athletes' assessment of fighting performance in terms of self-confidence and demographic profiles of sex, age, year level, and years of involvement as their p -values were higher than 0.05. On the other hand, the p -values of the demographic profiles of sex, age, year level, and years of involvement were 0.9154, 0.3989, 0.6844, and 0.7504, respectively, when examining the significant difference between motivation (a variable of fighting performance) and these demographic profiles. As their p -values were higher than 0.05, there were no statistically significant differences between the student-athletes' assessment of fighting performance with regard to motivation and demographic profiles of gender, age, grade level, and years of participation.

Relationship of Cooperative Learning and Fighting Performance:

Assessing the significant relationship between cooperative learning fighting performance yielded an r value and p -value of -0.2181 and 0.0167 , respectively. Therefore, there was a significant relationship between overall cooperative learning and overall fighting performance as they had a p -value of 0.0167 , which was lower than 0.05. This means that there is a negative weak correlation between cooperative learning and fighting performance.

Practices in Cooperative Learning among Sanda Athletes: Based on the teacher interviews, the following are recommended as good practices in cooperative learning among Sanda athletes.

Structured Training Methods: The effectiveness of a cooperative training strategy was demonstrated by learners who assisted and inspired each other, functioning as a team both during and outside of training sessions to optimize their performance (Salih *et al.*, 2021). Additionally, Kriswanto, Haryono, and Romadhoni (2019), found that students were able to reflect on the materials given by the lecturer, and the tactical approach of the lecturer provided a thorough evaluation of individual progress. The correct analysis allowed students to become aware of their mistakes during the learning process, and the implementation of cooperative values was already high among students.

Positive Relationship among Students: Positive relationships among students, coaches, and support staff are crucial for both athletic performance and overall well-being (Burns, Weissensteiner, & Cohen, 2019). In the context of athletic development, an athlete's progression and transition from novice to expert is significantly influenced by their social environment, including interactions with peers and the prevailing culture (Burns, Weissensteiner, & Cohen, 2019). Implementing cooperative learning methods within this environment can potentially enhance self-determined motivation, as outlined in the described model (Cecchini Estrada *et al.*, 2019).

Collaborative Exercises by Partner: In a study conducted by Feltz *et al.* (2020), it was found that engaging in collaborative exercises with a consistently superior partner resulted in greater work efforts during intense interval training when compared to exercising alone. This suggests that the presence of a skilled partner can motivate individuals to push themselves harder during challenging workouts.

Learning from One Another: Social networks play a significant role in maintaining consistent training habits and achieving set goals, as highlighted by Franken, Bekhuis, and Tolsma (2022). Creating an environment that fosters positive interdependence among students is crucial for promoting a sense of belonging and facilitating socialization and learning within teams. This is emphasized by Fernández-Río and Casey (2020), who argue that teachers should prioritize the establishment of environments that encourage and support positive interdependence in sports education settings to maximize the development of all students.

Effective Communication: According to Kim and Park (2020), maintaining open and effective communication with coaches is vital during competitions, especially in high-pressure situations or when athletes are facing psychological challenges. This emphasizes the importance of clear and supportive communication channels between coaches and athletes to provide guidance, motivation, and assistance when needed. Additionally, Davis, Jowett, and Tafvelin (2019) highlight that effective communication strategies contribute to enhancing the quality of the coach-athlete relationship and have a positive impact on an athlete's overall satisfaction with their sporting experience.

Policies and Strategies to Improve Cooperation and Competitive Spirit

The foregoing are recommended strategies to improve cooperation and competitive spirit.

Put Up Mentorship Programs for Students and Athletes: Engaging in mentorship programs can have significant advantages for students and athletes. According to Hoffmann (2018), being mentored by a peer athlete can positively contribute to both athletic and personal growth. The guidance and support provided by a mentor who has firsthand experience and understanding of the challenges faced in the sport can be invaluable.

Conduct Intra-Competitions, In-house Competitions: Incorporating intra-competitions or in-house competitions in Sanda classes can have positive effects on student motivation and engagement. According to Ivanova and Korostelev (2019), using a competitive approach in physical education classes can increase students' motivation and activate their interest in the subject matter. By introducing friendly competitions within the class, students are provided with a goal-oriented and stimulating environment that encourages them to push their limits and strive for improvement.

Conduct Team-Building Exercises: Engaging in team-building exercises is a valuable approach to foster positive team dynamics and enhance performance. According to Keith *et al.* (2018), teams that participated in team video gaming treatment exhibited a remarkable 20% improvement in productivity during subsequent tasks compared to teams involved in traditional team-building activities.

Have Mixed-level Training: Research conducted by Machado *et al.* (2019) revealed that the age and tactical skill level of players can significantly impact team performance and the exploratory behavior of individuals within the team. This implies that incorporating mixed-level training in Sanda classes, where participants of different skill levels train together, can have a positive effect on team dynamics and individual growth.

Cooperative Training Sessions: Participating in cooperative training sessions in Sanda classes can yield numerous benefits. McEwan and Beauchamp (2018) suggest that teamwork training can enhance the effectiveness of sports team members working together harmoniously. By incorporating cooperative training methods, such as partner drills and group exercises, Sanda students have the opportunity to develop their teamwork skills, communication, and synergy within the class. This fosters a sense of collaboration and shared responsibility, which can positively impact the overall performance of the students.

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