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Cooperative Learning on Sports Confidence among Students of Baseball Elective

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Abstract: Cooperative learning emphasizes collaboration, shared problem-solving, and communal knowledge, positing that learning in groups enhances understanding and practical application. This study aimed to explore the correlation between cooperative learning in a baseball elective and the sports confidence of 208 surveyed students. The findings indicated strong agreements in domains of Positive Interdependence, Interpersonal Skills, and Reflective Group Processing, with slightly lower agreement in Individual Accountability. Holistic Development emerged as the highest indicator of sports confidence, while Performance Assurance was lower, yet all were within agreeable ranges. The study recommends the "Team Synergy: Enhancing Sports Confidence through Cooperative Learning" program, aiming to blend cooperative learning strategies into sports training, thereby bolstering sports confidence and fostering a holistic development of student-athletes.

Keywords: Cooperative Learning; Sports; Baseball.

1. Introduction

This section elucidates the aim of the paper in exploring the relationship between cooperative learning in baseball and sports confidence. The introduction begins by underscoring the significance of studying how team-based learning in baseball can impact an athlete's confidence. Through a comprehensive literature review, the study summarizes existing findings, leading to a synthesis that identifies research gaps. The theoretical framework, rooted in the Social Interdependence Theory, bridges cooperative learning with sports confidence. The introduction then outlines specific research questions and hypotheses. Lastly, the section clarifies the study's significance and defines pivotal terms.

2. Statement of the Problem

The primary objective of this study is to determine the correlation between cooperative learning in baseball and sports confidence. By understanding this relationship, the study hopes to offer insights that could inform the development of effective training methods and modules optimized for boosting sports confidence through cooperative learning experiences in baseball.

Specifically, this study aims to answer the following research questions:

1.What is the demographic profile of the respondents in terms of:

1.1 Sex

1.2 Age

1.3 Year Level

2.What is the assessment of the respondents on the cooperative learning strategies in terms of :

2.1 Positive Interdependence

2.2 Individual Accountability

2.3 Interpersonal Skills

2.4 Reflective Group Processing

3. Is there a significant difference in the assessment of the respondents on the cooperative learning strategies when compared to demographic profile?

4. What is the assessment of the respondents on their sports confidence in terms of:

4.1 Performance Assurance

4.2 Leadership Influence

4.3 Psychological Preparedness

4.4 Holistic Development

5. Is there a significant difference in the assessment of the respondents on their sports confidence when compared to demographic profile?

6. Is there a significant relationship between the assessed level of cooperative learning and sports confidence?

7. What sports learning module can be developed based on the results of the study?

3. Hypotheses

In light of the growing body of research pointing to possible relationships between these variables, the objective of this study is to examine the corresponding null hypotheses:

There is no significant difference in the assessment of the respondents on the cooperative learning strategies when compared to demographic profile.

There is no significant difference in the assessment of the respondents on their sports confidence when compared to demographic profile.

There is no significant relationship between the assessed level of cooperative learning and sports confidence.

4. Methodology

The methodology section commences with a quantitative research approach employing comparative and correlational techniques. The backdrop is Zhengzhou Normal University, with students randomly selected from a baseball elective cohort. Instruments comprised a demographic questionnaire and two distinct Likert-scale surveys probing cooperative learning and sports confidence. Following a systematic data gathering process, analysis integrated statistical evaluations and qualitative thematic exploration. The study's ethical considerations were also emphasized, reflecting its commitment to research integrity.

4.1. Research Design

The research design for this study adopted a quantitative approach, utilizing both comparative and correlational designs. Within the comparative design, two or more groups were compared based on their responses or behavior related to cooperative learning in baseball and sports confidence. This illuminated any significant differences among these groups. Simultaneously, the correlational design was used to ascertain the strength and direction of the relationship between cooperative learning in baseball and sports confidence. This provided insights into how, and to what extent, these two variables relate to one another.

4.2. Sampling Method

The study was conducted at Zhengzhou Normal University (ZZNU), situated in Zhengzhou, the capital of Henan Province. Established in 1949, this distinguished institution has a rich history and a diverse educational landscape. Nestled near the Yellow River and at the foot of the Songshan Mountain, the university's campus sprawls across an area of 1060 mu, comprising a floor space of 627,800 square meters. The infrastructure is equipped with 221 specialized laboratories and training rooms. The value of its teaching and research equipment aggregates to 263 million yuan.

Further highlighting its academic richness, the university boasts a library that houses more than 1.78 million volumes of paper books, 2.523 million electronic books, and 57 databases in Chinese and foreign languages. In terms of its academic relationships, the university has fostered cooperative ties with 12 institutions across 9 countries, such as the United States, Britain, Canada, Russia, and India. It has also established Chinese language and culture exchange centers in three universities, including the Royal Canadian College. As part of its educational outreach, ZZNU plays a pivotal role in the educational exchange programs between Zhengzhou City and Joinville in Brazil.

Currently, the university employs over 1300 faculty and staff, with 358 holding senior professional and technical positions. It offers a multidisciplinary curriculum, encompassing areas such as teacher education, economics, law, education, literature, history, science, technology, and management. The student body stands at 16,697 full-time learners.

For the purposes of this study, attention was concentrated on the 452 students enrolled in the baseball elective. From this population, a sample size of 208 students was determined using the Raosoft sample size calculator. This sample size was derived considering a 5% margin of error, a 95% confidence interval, and a 50% response distribution. This selection ensures the study's findings are representative and statistically significant in understanding the relationship between cooperative learning in baseball and sports confidence.

The sampling design for this study was Simple Random Sampling (SRS). Given the nature of the study and the population of interest – students enrolled in the baseball elective at Zhengzhou Normal University – the SRS method is deemed the most suitable. This approach ensured that every individual student from the 452 students taking the baseball elective has an equal and independent chance of being selected in the sample.

4.3. Research Instrument

The Demographic Questionnaire served as the initial part, aiming to collate essential demographic data from the participants. This section comprised queries related to the student's age, sex, and academic year level at Zhengzhou Normal University. While the study doesn't primarily revolve around these demographic details, having this background information offered a contextual framework, enriching the comprehension of subsequent findings.

Following the demographic section is researcher-made questionnaire on cooperative learning about baseball. This section delved deeper into the realm of baseball, probing the application and perceived efficacy of cooperative learning techniques within this specific sport. It is structured with Likert scale statements that intricately assess four critical constructs of cooperative learning: Positive Interdependence, Individual Accountability, Interpersonal Skills, and Reflective Group Processing. By exploring these constructs, the study aimed to shed light on the nuances of how cooperative learning strategies unfold within the baseball elective and their consequential impacts on students. The questionnaire exhibited good psychometric properties with content validity index of 0.77 and Cronbach alpha of 0.91.

Lastly, a researcher-made questionnaire on sports confidence seeks to gauge the student's self-assuredness within the sporting domain, more specifically in baseball. This segment is populated with Likert scale statements meticulously designed to evaluate the different facets of sports confidence. Four central constructs frame this section: Performance Assurance, Leadership Influence, Psychological Preparedness, and Holistic Development. Investigating these dimensions is pivotal, as the study is anchored on discerning any potential correlations or patterns linking cooperative learning in baseball with sports confidence. The questionnaire demonstrated robust psychometric characteristics, achieving a content validity index of 0.79 and a Cronbach's alpha coefficient of 0.89, indicating high reliability and validity.

4.4. Data Gathering Procedure

The data gathering procedure was executed systematically to ensure accuracy, comprehensiveness, and consistency throughout the process. Here is a detailed breakdown:

Permission and Coordination:

Prior to the actual data collection, a formal request was submitted to the administration of Zhengzhou Normal University, seeking permission to conduct the research within its premises. Meetings was scheduled with relevant department heads or professors involved in the baseball elective to discuss the logistics and timetable of the data collection phase.

Instrument Finalization:

After obtaining feedback from experts for validity and after pilot testing the instrument for reliability, necessary modifications were made to the questionnaires to address any gaps, ambiguities, or redundancies.

Sampling:

Utilizing the roster of 452 students enrolled in the baseball elective, a list of names was prepared. Employing the simple random sampling technique, 208 students were randomly selected using draw lots.

Orientation and Distribution:

An orientation session was organized for the selected participants. This session aims to elucidate the objectives of the research, explain the structure of the questionnaire, and address any queries or reservations from the participants. Following the orientation, the research instrument was distributed among the participants.

Completion and Collection:

Participants were granted adequate time to complete the questionnaires thoughtfully. It is imperative to ensure an environment conducive to reflection, ensuring honest and considered responses.

Upon completion, the paper questionnaires were collected in sealed envelopes to maintain confidentiality.

Data Organization:

All collected data were organized. Paper responses were filed systematically.

Data Verification:

Before the analysis, a verification step was conducted. A subset of participants were contacted to confirm the authenticity and accuracy of their provided data. This step ensures the integrity of the responses.

Feedback and Acknowledgment:

Once the data collection process concluded, an acknowledgment note were sent to all participants, appreciating their contribution. They were informed about the tentative timeline when the study is completed.

4.5. Data Analysis

Starting with the demographic profile, this section is pivotal in painting a clear picture of the participants. Each participant's age, sex, and year level were tallied, with the frequencies showcasing the number of participants in each category. To provide a proportional view of these numbers against the total sample, percentages were also computed. This preliminary analysis offers a foundational understanding of who the participants are, setting the stage for subsequent analyses.

Moving on to the quantitative analysis, the numerical data undergoes rigorous statistical testing. The Independent t-test, a statistical measure, compared the means of two distinct groups, such as male versus female participants. This test aims to uncover any statistically significant differences between these two groups. Where the data involves more than two groups, such as different year levels, the ANOVA or Analysis of Variance was applied. It assesses if the means among these groups show any notable differences. Should the ANOVA identify such differences, further post-hoc tests pinpointed which specific groups vary from each other. Additionally, the relationship between the independent variable (cooperative learning in baseball) and the dependent variable (sports confidence) was examined through Pearson r Correlation. This test indicated the nature (positive or negative) and strength of the linear relationship between the two variables.

To facilitate the interpretation of the mean scores for cooperative learning and sport confidence, the following scale was used:

Table 1. The scale

Score Range	Verbal Descriptor	Interpretation
3.25 - 4.00	Strongly Agree	Very much experienced
2.50 - 3.24	Agree	Experienced
1.75 - 2.49	Disagree	Slightly experienced
1.00 - 1.50	Strongly disagree	Not experienced

5. Conclusion

In this study, the relationship between cooperative learning and sports confidence was explored across multiple dimensions, including demographic profiles and different domains of cooperative learning and sports confidence. The analysis, based on the data provided in the various tables, reveals a nuanced understanding of how cooperative learning impacts students' confidence in sports settings.

The demographic analysis indicated no significant differences in sports confidence levels across sex, age, and year level, suggesting that the benefits of cooperative learning in sports are broadly applicable and not confined to specific groups. This universal applicability implies that cooperative learning strategies can be implemented across diverse student populations without the need for tailoring to different demographic segments.

The domains of cooperative learning, comprising Positive Interdependence, Interpersonal Skills, Reflective Group Processing, and Individual Accountability, were all positively associated with sports confidence. Positive Interdependence was found to be the most strongly experienced aspect, implying that the students' perception of their interconnectivity and reliance on one another played a critical role in their confidence levels.

The strong, positive correlation between cooperative learning and sports confidence, as demonstrated by the Pearson r coefficient, reinforces the idea that cooperative learning environments are conducive to building sports confidence. This relationship is further solidified by the statistical significance of the findings, leading to the rejection of the null hypothesis.

In conclusion, the study presents compelling evidence that cooperative learning is a vital factor in enhancing sports confidence among students. These findings have several implications for educational and sports program design. Firstly, they suggest that incorporating cooperative learning structures into sports education can have a significant impact on students' confidence levels, regardless of their demographic background. Secondly, the positive outcomes associated with cooperative learning highlight the need for educators and coaches to foster environments that encourage teamwork, shared responsibility, and reflective practices.

The implications of these findings are far-reaching. For educational institutions, there is a clear incentive to integrate cooperative learning methods into their curricula to promote holistic student development. For sports teams and coaches, emphasizing cooperative learning can lead to greater team cohesion and individual confidence, which are critical for competitive success. Moreover, the universal applicability across demographic lines implies that these strategies can be broadly implemented, democratizing the benefits of sports participation and education.

Overall, the study underscores the importance of social interdependence in sports and educational settings, reinforcing the interconnectedness of learning processes, teamwork, and individual psychological outcomes such as sports confidence.

6. Recommendations

Based on the results of the study as discussed, which examined various aspects of cooperative learning and sports confidence among students taking a baseball elective, we can conclude that cooperative learning plays a significant role in enhancing sports confidence. The data showed strong agreement among students that cooperative learning domains like Positive Interdependence, Interpersonal Skills, Reflective Group Processing, and Individual Accountability are highly experienced in their baseball elective.

Additionally, the study indicated that these cooperative learning experiences do not significantly differ based on demographic profiles, suggesting that such educational approaches are effective across diverse student groups. Furthermore, the strong positive correlation between cooperative learning and sports confidence, evidenced by a Pearson r coefficient of 0.84, highlights the substantial impact of cooperative interactions on an individual's confidence in sports settings.

Implications of this study are far-reaching for the curriculum design of sports education programs. They suggest that incorporating cooperative learning strategies can be highly beneficial for students' development, not only in sports competencies but also in psychological preparedness and confidence. This aligns with social interdependence theory, which posits that cooperative group settings enhance personal and team outcomes.

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