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ISSN 2959-6149

The Impact of Participation in School Sports on Academic Performance and Teamwork Skills

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Abstract:

The research investigates how school sports impact academic results and teamwork competency by examining the growing trend toward using sports in educational settings for comprehensive student growth. This research assesses sports' effects on academic performance and team abilities and analyses any connected elements. The literature review underscores mixed findings, with some studies linking sports to cognitive and social benefits, while others highlight limitations due to program design. The research employed a quantitative approach using structured questionnaires to collect data from 80 participants. Research findings show that sports participation demonstrates minimal influence on academic achievement; however, it does foster medium-strength capabilities in teamwork skills, including communication and dispute-resolution abilities. Structured sports programs deliver maximum benefits based on research implications, yet the study's limitations, including self-reported data and restricted sampling, suggest broader evidence is still needed.

Keywords: Physical activity; Teamwork; Academic performance; Students.

1. Introduction

1.1 Study Background

Contemporary education is based on school sports programs that ensure students' physical well-being, mental development, and socialism. In the USA, 19.3% of high school students are organized sports participants[19]. Physical activity optimizes brain functions such as attention, memory, and problem-solving, increasing sleep quality and adaptability[9]. However, balancing sports with academics is challenging because sports can take too much time and reduce study time and academic performance[12]. It reinforces the need to examine school sports' effect on educational and social results, including teamwork skills that are important for individual and occupational development.

This study was designed to evaluate the impact of school sports on overall academic performance and

teamwork skills, focusing on time management, leadership development, and interpersonal relationships. Although previous research, such as Hrabcak[7], shows that 71% of student-athletes report improved teamwork skills, little is known regarding how sports benefits are achieved or implemented. This research provides evidence-based insights to optimize sports programs for educational and social benefits. This paper is structured with an introduction establishing the context and objectives and examining existing findings. The methodology section presents data collection and statistical analysis methods for the quantitative approach. Finally, the conclusion summarizes the implications for the optimal design of sports programs to enhance academic and teamwork benefits. Through these aspects, this research offers empirically grounded actionable insights to enhance sports integration within educational frameworks.

1.2 Research Questions

1. What factors influence the relationship between school sports participation, academic performance, and teamwork skills, and how are these factors interrelated?
2. What is the overall impact of school sports participation on students' academic performance and teamwork skills?

1.3 Study Significance

Examining the combined impact of sports programs on educational achievement and teamwork abilities will boost our understanding of optimal educational and extracurricular interventions. This study uses its findings to enlighten educators, policymakers, and parents through evidence-based protocols that maximize the effectiveness of the school sports program. Burns and Collins's research demonstrates the value of structured leadership frameworks and communication approaches in sports, which this paper explores through quantitative assessments[5]. The analytical methods of correlation and regression help provide detailed knowledge regarding sports participation's effect on academic outcomes for researchers to develop customized programs that handle athletic activities alongside educational requirements.

2. Literature Review

2.1 Relationship Between School Sports and Academic Performance

2.1.1 Physical Activity and Cognitive Function

Numerous academic studies investigate the connection between physical activity and cognitive development since regular exercise improves brain functioning, memory, and problem-solving. According to Larsen, team sports directly impact brain activity, while school-based programs enhance physical activity duration, sleep quality, and mental adaptability[9]. These findings align with Haverkamp et al.'s meta-analysis, which reveals significant enhancements among adolescents engaging[6]. Both studies underscore the cognitive benefits of physical activity, though Haverkamp et al. highlight that shorter interventions often yield more pronounced attention gains. Contrastingly, according to Tollabi et al., emotional engagement in physical education builds cognitive capabilities for students[22]. Their study indicates developmental relationships between emotions and cognition, yet their use of descriptive methods restricts the making of causal connections. Liu and Taresh further complicate the debate by finding that excessive sports participation leads to academic complications because students have limited time to focus on their studies[12]. Despite their differences, it is clear that physical exercise enhances cognition, but individual success involves maintaining optimal levels of athletic intensity together with school responsibilities.

2.1.2 Sports as a Tool for Academic Discipline

Sports activities develop fundamental life abilities, including time management, severance, and focus, that prove beneficial in academic environments. This extensive study reveals numerical proof that athletes in sports show increased academic discipline. However, according to Bouguezzi and Chaabene, systematic scheduling through periodization protects students from excessive academic and athletic burdens[4]. The paper provides essential theoretical ideas about workload management without showing evidence through real-world data.

Conversely, the research conducted by Liu and Taresh shows that dedicated sports participation leads to study disruption, which results in a detrimental relationship between sports commitment and academic results. The combined research design utilizes quantitative survey outputs and qualitative interviewing techniques to investigate trade-off relationships thoroughly. Martinez supports integrated structured physical activity within school days since research shows positive results for academic and physical outcomes[13]. The absence of evidence-based findings about the operational uses of these interventions raises doubts about their potential execution within practical settings. Sports develop educational commitment, but organizations must support athletes sufficiently to prevent extracurricular activities from eclipsing academic responsibilities.

2.1.3 Challenges in Balancing Sports and Academics

Students encounter various challenges while managing

ISSN 2959-6149

athletic events with their regular classroom responsibilities. Based on Thompson et al.'s research findings, students managing academic sports commitments develop increased stress levels and exhibit burnout symptoms and fatigue[21]. Even though the researchers established their research details precisely, their single-sports school design limited the scope of observations in their investigation. Secondary data from Martinez's research show that integrated physical education helps students succeed academically without discussing practical implementation challenges[13].

Research by Lesmawan et al. proves that basketball players maintain their disciplinary structure alongside effective schedule management and time management operational abilities[10]. Studies focusing on a single sport through qualitative research methods encounter difficulties generalizing their findings. Permana et al. also investigated how athletes with special needs face discipline-promoting benefits of sports alongside resource and time-based limitations[15]. Besides, quantitative methods help strengthen this study's validity, but the researchers recognize that environmental elements can influence decision outcomes. Sports teach discipline alongside resilience, but existing structural barriers and environmental influencers demand evidence-based tailored approaches.

2.2 Development of Teamwork Skills Through Sports

Blended participation in sports teams creates optimal conditions for members to build relationships while fostering leadership competencies. Implementing the Sport Education Model (SEM) improved interpersonal skills and stronger group cohesion among Taiwanese university students, as reported in Kao's research using a quasi-experimental design[8]. According to Wang, students from Chinese junior high schools in Hainan who participated in extracurricular sports demonstrated improved leadership abilities with enhanced teamwork proficiency together with improved communication competencies and more potent decision-making abilities through their extensive study[23]. The authors presented statistical findings gathered through comprehensive research, demonstrating that sports participation leads to leadership development. Sports studies offer insight into collaborative advantages but fail to address the multifaceted cultural and environmental influences that Burns and Collins highlighted[5]. Research conducted with young athletes demonstrated that team sports facilitate peer relationships and personal development, whereas individual sports may fail to provide such social benefits in specific contexts.

Sports activities help individuals develop interpersonal relationships as they enhance problem-solving skills and related team dynamics. Shen et al. researched medical students undergoing team sports intervention as part of competitive physical education, significantly improving team dynamics leadership capabilities and conflict mediation competencies[18]. Teamwork interaction among athletes participating in performance sports faces challenges, according to Burns & Collins (2023), yet professional members of these teams require proper leadership structures with clear communication protocols to succeed together. A study conducted by Ouddak in 2024 demonstrated how sports coaches' personality influences team cohesion, thus validating leadership methods' significant impact on coalition dynamics. Liu and Chang reported positive outcomes in their study while observing low skills in strategic planning and community involvement among college athletes who demonstrated uneven sport-based teamwork skill transfer[11]. Sports generate measurable improvements in interpersonal competencies and psychosocial development but must integrate effective program designs to connect academic learning to professional applications.

2.3 Theoretical Frameworks

2.3.1 Cognitive Development Theory

As described by Jean Piaget in his cognitive development theory, environmental contacts enable knowledge acquisition and enhance memory flexibility and problem-solving abilities[3]. This framework maintains its position as a fundamental principle that shows exercising affects cognition for improved academic performance. Applied studies demonstrate how these essential principles operate within athletic programs in educational institutions. Research conducted by Larsen et al. indicates that school team sports programs enhance cognitive resilience and improve memory and attention functionality when students combine physical exercise with scheduled sleep durations[9]. Similarly, students participating in chronic physical activity showed faster processing abilities alongside enhanced attention and working memory based on the findings of Haverkamp in their meta-analysis study[6]. Research data supports the concept that physical exercise builds cognitive abilities because of its developmental advantages for the brain. However, Tollabi highlighted the emotional aspect of physical education, showing its role in shaping cognitive and emotional interdependence[22]. The structured nature of school sports creates environments that promote brain development through enhanced focus abilities, time management skills, and problem-solving techniques, which match the study's academic performance assessment goals.

2.3.2 Social Learning Theory

Albert Bandura developed the social learning theory, which shows that people gain new abilities and behaviors from observation combined with mimicking and group engagement. The Social Learning Theory highlights behavioral modelling within groups; hence, it proves very useful for building skills like teamwork with leadership and communication in sporting environments[2]. Bandura explained that reinforcement processes alongside feedback help strengthen learned behaviors, while team sports develop cooperative abilities through social interactions[1]. Kao's research showed that the sports education Model (SEM) improves teamwork skills[8], helping teams to build better integration and enhancing interaction during group activities. According to Wang and Ismail, junior high school students participating in extracurricular sports develop enhanced leadership competencies by improving their communication and decision-making abilities[23]. The competitive physical education programs established by Shen et al. allowed students to develop teamwork skills through active conflict resolution and leadership development[18]. Evaluative research directly supports the main components of Social Learning Theory by identifying behavioral display effects alongside inter-social dynamics in sports environments. This investigation utilizes Social Learning Theory to demonstrate how students master cooperative skills through team sports to learn transferable skills for school and career applications.

2.4 Gaps and Future Directions

Research has extensively investigated school sports' academic benefits alongside teamwork development. However, knowledge gaps persist regarding which factors influence performance specifically and how they differ among various sports and student groups with varying backgrounds. Empirical analysis of academic and teamwork performance variables demonstrates measurable associations through regression and correlation analysis to guide educational policy decisions.

3. Research Methodology

3.1 Research Design

Quantitative methods employed here reveal objective variable connections statistically through the analysis of quantifiable information by hypothesis testing, all using the positivistic principles of objective variable connections. An amalgamation of statistical analysis, including correlation and regression, leads to a robust framework through which scientists can study the effects of school sports on academic performance and team metric outcomes. Human interpretive methods are more contextual and allow individual findings but have less general application, while quantitative approaches have better accuracy measurements. The study can produce measurable results that can be reproduced for generalized results across broader population groups. The research fulfills its practical goals by determining key variables to demonstrate direct relationships between components and providing tangible solutions to school sports growth.

3.1.1 Research Approach

This research project is studied empirically and theoretically because it combines quantitative data collection methods with a positivist theoretical foundation. Research on this combination begins by using existing theories, including Cognitive Development Theory and Social Learning Theory, to analyze how school sports affect academic performance and teambuilding abilities[17]. Empirical analysis will involve collecting data from 80 participants and using statistical techniques, including combining correlation and regression, to examine the collected data and discover research relationships. The research methodology structure helps organize research on targeted subjects with promising results that can be measured for general use.

3.1.2 Data Collection Method

The researchers will gather primary data by distributing a structured questionnaire to students participating in school sports activities. The carefully designed questionnaire aims to record data regarding school performance, team colleague abilities, and influence factors on these measurements. The standardized survey approach allows data collection at scale to feed into empirical analysis done through correlation and regression measures. This efficient and scalable method offers quantitative data that matches the research goals.

3.1.3 Sampling Strategy

This investigation focuses on understanding students who continuously engage with their school's athletics programs. The investigation utilizes non-probability purposive sampling for 80 student-athletes who played individual and team sports over at least one academic year. Data collection should focus exclusively on individuals who routinely play or maintain regular sports attendance. The chosen sample of 80 participants enables researchers to employ correlation and regression analysis techniques while keeping most variables generalized. Researchers can achieve dependable results through proper sampling approaches that help select participants accurately representing significant demographic populations[16].

ISSN 2959-6149

3.1.4 Data Analysis Method

The analysis will use SPSS software to process data through descriptive statistics cor, relation tests, and regression analysis. Descriptive statistics thoroughly describe demographic variable data, including age, gender, and sports-type characteristics. A correlation analysis will assess the magnitude and type of the relationships between sports participation data, academic performance measures, and teamwork competencies. Also, regression analysis will determine which elements, including time management, contribute to academic achievements and teamwork success. SPSS operates to deliver precise and efficient analysis, which generates robust findings that fulfill study objectives.

3.2 Ethical Considerations

The study will maintain proper informed consent by explaining the research aims and procedural details to all participants. All participant information will stay confidential through data anonymization and secure storage practices. Also, the study will obtain ethical approval from specific institutional review board authorizations to comply with proper ethical guidelines. Besides, study participation remains strictly voluntary because participants will learn about the right to stop at any time without risking any negative consequences for their voluntary status. That safeguards their autonomy and preserves ethical research standards.

4. Research Findings

4.1 Demographic Analysis

4.1.1 Count of Age

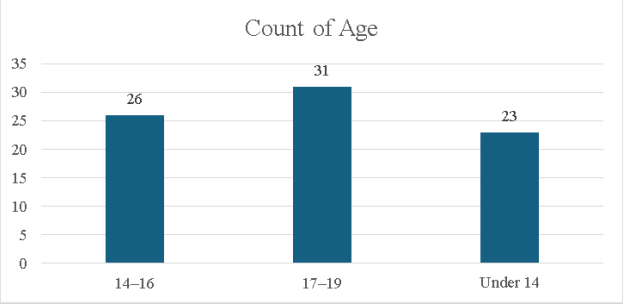

Fig. 1 Count of Age

The data shows participant age distributions through a bar chart representation. Thirty-one people (38.8%) fall within the age bracket of 17 to 19, making them the most numerous group among all participants. The 14–16 age group contains 26 participants, while the total number of participants under 14 is 23. The data highlights that most respondents belong to the older age bracket (17–19), reflecting a slightly more mature demographic in this sample.

4.1.2 Count of Gender

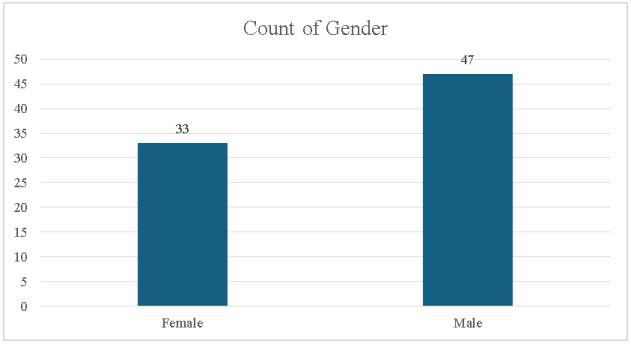

Fig. 2 Gender

The bar chart reveals the gender breakdown of the participants: males comprise 58.8 percent (47 subjects), and females represent 41.2 percent (33 subjects). Data shows that male participants comprise more of the study sample. An unequal participant ratio across genders could affect research results by favoring masculine interpretations of sports involvement‘s impacts on academic and teamwork abilities.

4.1.3 Count of Sport Participation

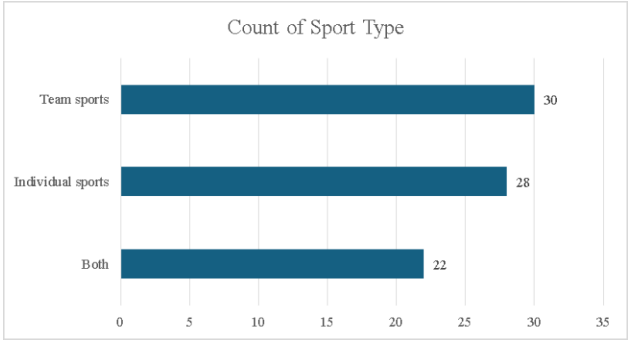

Fig. 3 Sport Participation

Participant distribution across sports activities shows that team sports have the largest group with 30 individuals (37.5%), while individual sports have 28 participants (35.0%), and 22 people (27.5%) participate in both. Team and individual sports, with 37.5% and 35%, respectively, hold prominent positions in this distribution since they surpass the percentage of participants who choose to engage in both types of sports (27.5%).

4.1.4 Count of Weekly Sports Hours

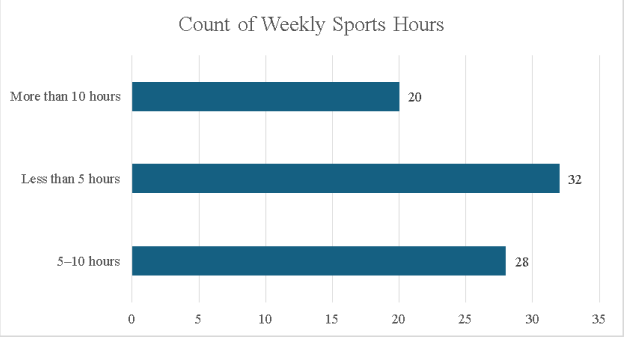

Fig. 4 Count of weekly sports hours

Data from the bar chart reveals that students who participate in sports activities spend their time engaging in different levels throughout the week. Forty percent of participants (32 students) devote less than five hours to sports each week. Another 35 percent (28 participants) play sports between five and ten hours per week, and 20 individuals (25 percent) spend eleven or more hours per week in sports activities. This data demonstrates that most participants limit their sports activities to weekly periods while a smaller group invests substantial time in sports.

4.2 Correlation Analysis

Table 1 Correlation Values

Correlations				
		Focus Improvement from Sports	Task Prioritization Improvement	Time Management Improvement
Focus Improvement from Sports	Pearson Correlation	1	-.149	-.006
	Sig. (2-tailed)		186	955
	N	80	80	80
Task Prioritization Improvement	Pearson Correlation	-.149	1	-.006
	Sig. (2-tailed)	186		958
	N	80	80	80
Time Management Improvement	Pearson Correlation	-.006	-.006	1
	Sig. (2-tailed)	955	958	
	N	80	80	80
Academic Grade	Pearson Correlation	126	-.073	039
	Sig. (2-tailed)	266	522	734
	N	80	80	80
Teamwork Ability	Pearson Correlation	-.209	-.008	-.323**
	Sig. (2-tailed)	062	944	003
	N	80	80	80
Conflict Resolution Improvement	Pearson Correlation	186	005	-.153
	Sig. (2-tailed)	098	966	174
	N	80	80	80
Communication Skills Improvement	Pearson Correlation	-.052	-.031	047
	Sig. (2-tailed)	650	782	680
	N	80	80	80

ISSN 2959-6149

Table 2 Correlation Values

Correlations				
		Academic Grade	Teamwork Ability	Conflict Resolution Improvement
Focus Improvement from Sports	Pearson Correlation	126	-.209	186
	Sig. (2-tailed)	266	062	098
	N	80	80	80
Task Prioritization Improvement	Pearson Correlation	-.073	-.008	005
	Sig. (2-tailed)	522	944	966
	N	80	80	80
Time Management Improvement	Pearson Correlation	039	-.323**	-.153
	Sig. (2-tailed)	734	003	174
	N	80	80	80
Academic Grade	Pearson Correlation	1	082	077
	Sig. (2-tailed)		471	500
	N	80	80	80
Teamwork Ability	Pearson Correlation	082	1	-.231*
	Sig. (2-tailed)	471		039
	N	80	80	80
Conflict Resolution Improvement	Pearson Correlation	077	-.231*	1
	Sig. (2-tailed)	500	039	
	N	80	80	80
Communication Skills Improvement	Pearson Correlation	-.070	-.134	046
	Sig. (2-tailed)	538	235	688
	N	80	80	80

Table 3 Correlation Values

Correlations		
		Communication Skills Improvement
Focus Improvement from Sports	Pearson Correlation	-.052
	Sig. (2-tailed)	650
	N	80
Task Prioritization Improvement	Pearson Correlation	-.031
	Sig. (2-tailed)	782
	N	80
Time Management Improvement	Pearson Correlation	047
	Sig. (2-tailed)	680
	N	80
Academic Grade	Pearson Correlation	-.070
	Sig. (2-tailed)	538
	N	80

Teamwork Ability	Pearson Correlation	-.134
	Sig. (2-tailed)	235
	N	80
Conflict Resolution Improvement	Pearson Correlation	046
	Sig. (2-tailed)	688
	N	80
Communication Skills Improvement	Pearson Correlation	1
	Sig. (2-tailed)	
	N	80

The correlation table shows how different variables connecting sports activity to academic performance and teamwork competency interact. Most relationships are weak and insignificant, but some links stand out. Better time management practices correlate negatively with Teamwork Ability (r = -0.323, p = 0.003), suggesting athletes reduce teamwork development when focusing on individual work instead of group activities. Also, the data demonstrates negative, weak associations between Teamwork Ability and Conflict Resolution Improvement (r = -0.231, p = 0.039), indicating possible trade-offs between these performance areas. Besides, the relationship between Sports-Enabled Focus Enhancement and Academic Achievement (r = 0.126, p = 0.266) lacks statistical significance, demonstrating minimal direct evidence for stronger academic performance through improved attention span. These findings demonstrate how sports participation benefits create intricate interdependencies that warrant directed interventions to protect participants from skill competition conflicts.

4.3 Regression Analysis

4.3.1 Regression 1: Academic Performance

Table 4 Regression numerical analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	143[a]	020	-.018	1.127

a. Predictors: (Constant), Focus Improvement from Sports, Time Management Improvement, Task Prioritization Improvement

Table 5 Variance analysis

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.002	3	667	526	666[b]
	Residual	96.485	76	1.270		
	Total	98.488	79			

a. Dependent Variable: Academic Grade
b. Predictors: (Constant) Focus Improvement from Sports, Time Management Improvement, Task Prioritization Improvement

Table 6 t-value analysis

Coefficients[a]				
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t

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1	(Constant)	2.133	486		4.390
	Task Prioritization Improvement	-.041	087	-.055	-.477
	Time Management Improvement	030	086	039	343
	Focus Improvement from Sports	091	089	118	1.027

Table 7 p-value analysis

Coefficients[a]		
Model		Sig.
1	(Constant)	000
	Task Prioritization Improvement	635
	Time Management Improvement	732
	Focus Improvement from Sports	308

a. Dependent Variable: Academic Grade

The regression analysis assesses how focus improvement from sports, time management, and task prioritization improve academic grades. The model reveals a weak correlation between Predicted Variables and Academic Grades, as shown by a low predictive power of $R^2 = 0.020$ and an adjusted R^2 value of -0.018. The ANOVA analysis reveals that the model lacks statistical significance, with an F value of 0.526 and a p-value of 0.666. None of the predictors significantly influence academic performance, as shown by p-values: The three Tested Dimensions, including Focus Improvement ($p = 0.308$), Time Management ($p = 0.732$), and Task Prioritization ($p = 0.635$), were found to have no significant effect on Academic Grade. The beta coefficients remain low due to weak relationships between variables. The weak relationships between these variables and academic grades show that alternative factors require investigation to identify potential influences.

4.3.2 Regression 2: Teamwork Skills

Table 8 Regression numerical analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	296a	088	052	1.411

a. Predictors: (Constant), Communication Skills Improvement, Leadership Role Frequency, Conflict Resolution Improvement

Table 9 Variance analysis

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.512	3	4.837	2.430	072[b]
	Residual	151.288	76	1.991		
	Total	165.800	79			

a. Dependent Variable: Teamwork Ability

b. Predictors: (Constant), Communication Skills Improvement, Leadership Role Frequency, Conflict Resolution Improvement

Table 10 t-value analysis

Coefficients[a]					
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t
1	(Constant)	4.432	594		7.456
	Leadership Role Frequency	-.147	118	-.138	-1.251
	Conflict Resolution Improvement	-.210	111	-.209	-1.894
	Communication Skills Improvement	-.127	114	-.123	-1.121

Table 11 p-value analysis

Coefficients[a]		
1	Model	Sig.
	(Constant)	000
	Leadership Role Frequency	215
	Conflict Resolution Improvement	062
	Communication Skills Improvement	266

a. Dependent Variable: Teamwork Ability

The analysis investigates how Teamwork Ability reacts to Leadership Role Frequency alongside Conflict Resolution Improvement and Communication Skills Improvement. Teamwork ability prediction based on the model reaches 8.8% accuracy ($R^2 = 0.088$), but the adjusted R^2 shows 0.052, reflecting minimal predictive capability. The combined model demonstrates potential significance with an F value of 2.430, yet the individual variables remained non-significant at $p = 0.072$. Among the evaluated factors, Conflict Resolution Improvement demonstrates the most damaging relationship (Beta = -0.209, $p = 0.062$), then Leadership Role Frequency (Beta = -0.138, $p = 0.215$), and Communication Skills Improvement (Beta = -0.123, $p = 0.266$). The research findings demonstrate that these predictors weakly affect teamwork ability, and their statistical associations are not statistically relevant. This discovery emphasizes the need for researchers to evaluate alternative influencing factors for teamwork skills.

5. Conclusions and Implications

5.1 Study Summary

This research evaluated school sports involvement effects on academic achievements and team cooperation but revealed various complexities from numerous contributing aspects. Sports engagement produces social and cognitive advantages yet appears to have little direct impact on academic performance, even though it enhances students' ability to concentrate and manage their time effectively. Better organizational protocols must be implemented in sports programs to turn their performance-related skills into measurable academic accomplishments. Data confirmed the low correlations between teamwork skills yet showed that enhancing focus abilities often led to decreased interpersonal teamwork capabilities. According to research findings, properly organized sports initiatives with structured activities under strong leadership contribute to better academic development and teamwork growth.

5.2 Study Implications

Research reveals that well-designed sports education programs enable organizations to deliver academic progress and promote student teamwork skills. Educational professionals and policymakers must develop interdisciplinary sports programs that unite physical activity education with academic advancement and social development. Maximizing both personal and team achievement results from developing leadership abilities and fostering working together through organized time and leadership development initiatives. Each school needs programs to help students manage their studies while participating in sports and promoting their well-being throughout development. The collected data must be built into policies reinforcing the link between sports activity participation and educational progress.

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5.3 Study Limitations

The study demonstrated various limitations which could affect its final results. Internal bias could result from collecting participant-reported data since some people may report their skills inaccurately. Besides, the investigated data set included a sufficient number of participants. Still, it may have limited representation because it failed to capture a comprehensive range of sports programs across different regions and demographic groups. The study also could not evaluate the qualities of sports programs and participants‘ socioeconomic factors that could help explain different outcomes. Future studies must address these research limitations by utilizing more prominent group participants from various demographic populations.

References

[1] Allan, J. An analysis of Albert Bandura's aggression: A social learning analysis. Macat Library. 2017

[2] Bandura, A. Social-learning theory of identificatory processes. Handbook of socialization theory and research. 1969, 213, 262.

[3] Barrouillet, P. Theories of cognitive development: From Piaget to today. Developmental Review. 2015, 38, 1-12.

[4] Bouguezzi, R., Chaabene, H. Periodization: A Strategic Influence in Athletics and Academics. Tunisian Journal of Sports Science and Medicine. 2024, 2(1), 21-24.

[5] Burns, A., Collins, D. Interdisciplinary practice in performance sport: A scoping review of evidence of collaboration. European Journal of Sport Science. 2023, 23(9), 1877-1891.

[6] Haverkamp, B. F., Wiersma, R., Vertessen, K., et al. Effects of physical activity interventions on cognitive outcomes and academic performance in adolescents and young adults: A meta-analysis. Journal of sports sciences. 2020, 38(23), 2637-2660.

[7] Hrabcak, J. S. An Exploration of Athlete Thoughts and Perceptions of Cohesion in Coacting Sports. 2023.

[8] Kao, C. C. Development of team cohesion and sustained collaboration skills with the sports education model. Sustainability. 2019, 11(8), 2348.

[9] Larsen, M. N., Mohr, M., Lobelo, F., et al. Recreational team sports: prevention, treatment, and rehabilitation of non-communicable diseases. Frontiers in Public Health. 2025, 13, 1549065.

[10] Lesmawan, H., Ardianti, S., Prasetya, A., et al. The Role of Basketball Education in Improving Students' Motor Skills and Discipline. Journal of the American Institute. 2025, 2(1), 1-8.

[11] Liu, Z., Chang, L. Sports Engagement and Leadership Competencies Development in College Students. Journal of Education and Educational Research. 2024, 8(3), 22–33.

[12] Liu, T., Taresh, S. The Impact of Sports Participation on College Students' Learning Outcomes: A Mixed Methods Study Based on Multiple Campuses. Journal of Ecohumanism. 2024, 3(7), 3649–3666.

[13] Martinez, A. Impact of School-Based Physical Activities on Academic Performance in Canada. International Journal of Physical Education, Recreation and Sports. 2024, 2(2), 12–24.

[14] Ouddak, M., Gueracha, T., Achira, M. Y., et al. Personality Traits Of Sports Coaches And Their Relationship To Team Cohesion. Journal of Positive School Psychology. 2024, 8(4), 167-177.

[15] Permana, D., Tarigan, B., Budiana, D., et al. Contribution of Sports Training to the Discipline of Indonesian Athletes with Special Needs. Indonesian Journal of Sport Management. 2024, 4(2), 220-231.

[16] Ritchie, J., Lewis, J., Elam, G., et al. Designing and selecting samples. Qualitative research practice: A guide for social science students and researchers. 2003, 2, 111–145.

[17] Saunders, M., & Tosey, P. Research Design. 2012.

[18] Shen, Z., Zeng, X., Li, J., et al. Does participation in sports competitions enhance interprofessional teamwork among medical students? Evidence from a medical school curriculum experiment. BMC Medical Education. 2024, 24(1), 821.

[19] Information on: www.statista.com/topics/1749/physical-activity/.

[20] Tanweer, A., Gade, E., Krafft, P. M., et al. Why the data revolution needs qualitative thinking. Harvard Data Science Review. 2021, 3.

[21] Thompson, F., Rongen, F., Cowburn, I., et al. A Longitudinal Mixed Methods Case Study Investigation of the Academic, Athletic, Psychosocial and Psychological Impacts of Being a Sports School Student Athlete. Sports Medicine. 2024, 1–29.

[22] Tollabi, M., Babai Mazreno, A., Fazel Kalkhoran, J., et al. Realization of the Purposes of Affective (Emotional) Domain of Physical Education among Male High School Students. Journal of Pediatric Perspectives. 2024, 12(7), 18893-18901.

[23] Wang, J., Ismail, A. Research on the Relationship between Leadership Skills and Participation in Extracurricular Sports Activities among Junior High School Students in Hainan, China. Journal of Ecohumanism. 2024, 3(8), 5831–5845.