

Assessing the Quality and Effectiveness of School-Based Sports Coaching Programs in China

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Abstract: This research assessed the effectiveness of sports coaching programs implemented in schools in China. It examines explicitly crucial elements such as coaching credentials, program structure, sports infrastructure, safety protocols, monitoring and evaluation approaches, and technology integration. The study used a stratified sampling technique to choose a representative sample of athletes from various universities. Data was gathered by administering questionnaires and conducting interviews to evaluate the athletes' perspectives on the coaching programs. The findings suggest that athletes typically have a good perception of coaching programs, especially about their effective promotion of cooperation, safety, and use of technology. However, some aspects need improvement, including grasping sports skills, allocation of facility money, and availability of contemporary resources. Furthermore, the research revealed no statistically significant disparities in athletes' evaluations or program outcomes when they were categorized according to their gender, sport, or length of participation. Furthermore, the coaching programs show a modest favorable impact on athletes' physical fitness, sports performance, and general well-being, with specific attention on the development of endurance, resilience, and problem-solving skills. The study furthermore cites many significant obstacles coaches encounter, including resource constraints, cultural and academic demands, inadequate professional growth opportunities, and hurdles to effective communication.

Keywords: Coaching Credentials; Program Structure; Sports Infrastructure; Safety Protocols; Monitoring Evaluation Approaches; Technology Integration.

1. Introduction

It is a monument to China's great commitment to sports excellence that the country has a rich sporting past, which is distinguished by remarkable victories in international competitions such as the Olympics and the Paralympics. This commitment permeates all sectors of society, including the educational system, which is where school-based sports coaching programs have a significant role to play in improving student performance (Lin & Huang, 2023). The infrastructure for the development of sports in China includes several programs, which are aimed to recognize, cultivate, and develop young athletic abilities, as well as to promote physical fitness and instill vital values in students.

A significant number of people believe that China's excellent sports education system is the reason for the country's outstanding performance in international sporting events. It is a system that places an emphasis on the significance of recognizing and cultivating young talents at a young age for future generations. An example of this would be the fact that studies have demonstrated that China's investment in the growth of grassroots sports has considerably helped to the country's creation of elite athletes. A report that was published in 2017 by the National Sports Bureau of China underlines the direct connection that exists between school-based sports programs and the success that the country has had in creating athletes of world-class caliber (Liu, Duan, Cheng, Liu, Li, & Zhang, 2023).

These initiatives have an impact on China's population that extends beyond the development of elite athletes. There are long-term health benefits associated with encouraging active involvement in sports beginning at a young age. These benefits include lowering the burden of lifestyle-related diseases and strengthening the overall well-being of the

population of the nation. According to Chen et al. (2020), engaging in regular physical activity has been linked to significant improvements in cardiovascular health, decreased rates of obesity, and higher mental well-being. The implementation of school-based sports coaching programs is an essential countermeasure in a culture that is increasingly struggling with the issue of inactive lives.

In addition, these programs inculcate qualities such as tenacity, discipline, and teamwork in kids, which contributes to the overall growth of the pupils. In a study that was carried out in Chinese schools by Li and Li (2017), the authors highlighted the positive impact that participation in sports had on the formation of character. According to the findings of the study, students who participated in sports coaching programs demonstrated stronger levels of collaboration, leadership qualities, and a strong work ethic from the beginning.

The educational system in China is defined by its immense diversity, which includes a wide variety of schools located in a variety of settings, ranging from major metropolises to rural settlements. Because of this variability, it is necessary to have a comprehensive understanding of how school-based sports coaching programs operate in a variety of diverse settings. It is possible that the study will offer insight on how coaching programs in densely populated areas effectively manage resources and adapt to the demands of a greater student population in urban settings. On the other hand, it is possible to investigate the difficulties and opportunities that are encountered by schools that have minimal resources in rural locations.

A study that was conducted by Zhang and Liu (2018) brought to light the significance of sports coaching programs in Chinese schools located in rural areas. According to the findings of their research, they found that schools located in rural locations were able to utilize coaching programs to boost

student involvement, physical health, and overall morale, despite the fact that they had limited resources. The fact that these programs are adaptable and relevant across a wide variety of educational settings is highlighted by this phenomenon.

This study has the purpose of evaluating the quality and efficiency of sports coaching programs that are offered in schools in China, determine the essential elements and qualities that are responsible for the accomplishments of these programs or initiatives, gain an understanding of the influence that coaching programs have on the overall well-being of students, as well as their physical health and athletic performance, and investigate whether there are any differences in the quality and effectiveness of coaching programs based on the location of the school, its size, and demographic considerations. Further, study is to make recommendations for the purpose of improving and optimizing school-based sports coaching programs in China.

Meanwhile, there is a noteworthy research gap in China when it comes to completely measuring the quality and effectiveness of school-based sports coaching programs, despite the fact that China's dedication to sports education is obvious. Existing research frequently concentrates on the development of elite athletes or investigates particular parts of sports education; hence, there is a want for a comprehensive examination. Additionally, there is a lack of research that investigates the intricacies of regional variations in program quality, which is essential for ensuring that sports education is accessible to all players. Through the provision of an all-encompassing evaluation that takes into account urban and rural settings, varying school sizes, and the various requirements of students, the purpose of this study is to help bridge these information gaps. This project aims to give significant insights that can drive policy decisions, curriculum creation, and resource allocation in order to improve school-based sports coaching programs across China. This will be accomplished by addressing the research gap that has been identified.

Overall, the significance of this study is highlighted by the fact that it has the ability to influence not just the landscape of sports education but also the larger social fabric of China. The purpose of this research is to contribute to China's continued journey toward excellence in sports and physical education by analyzing the quality and efficiency of school-based sports coaching programs. Additionally, the research aims to promote the holistic development of China's young.

2. Results and Discussions

Table 1 presents a comprehensive overview of the participants' demographic characteristics, including their gender, their activities, and the length of their participation period in these sports. The data indicates that a significant proportion of the participants are female, constituting 55.8% (130 persons), while men represent 44.2% (103 individuals) of the overall sample size of 233 respondents. The analysis of sports participation reveals that soccer and basketball exhibit comparable levels of popularity, as seen by 36 participants in each sport, accounting for 15.5% of the overall responses. Additional sports in the study include tennis and martial arts, with each sport accounting for 14.6% of the total participants, with 34 persons participating in each sport. The proportion of persons participating in track and field is 12.4% (29 individuals), volleyball (9.9%) (23 individuals), swimming (9.0%) (21 individuals), and gymnastics (8.6%) (20

individuals).

Table 1. Profile of the Respondents

SEX	FREQUENCY	PERCENTAGE
Male	103	44.2
Female	130	55.8
Total	233	100.0
SPORT	FREQUENCY	PERCENTAGE
Soccer	36	15.5
Basketball	36	15.5
Swimming	21	9.0
Tennis	34	14.6
Track and Field	29	12.4
Volleyball	23	9.9
Gymnastics	20	8.6
Martial Arts	34	14.6
Total	233	100.0
DURATION OF INVOLVEMENT	FREQUENCY	PERCENTAGE
1-2 Years	59	25.3
3-5 Years	62	26.6
6-10 Years	30	12.9
More than 10 Years	82	35.2
Total	233	100.0

For the length of engagement in sports, the most substantial cohort of participants, including 35.2% (82 persons), had maintained their participation for a period beyond ten years. Subsequently, 26.6% (62 people) have reported involvement for 3-5 years, while 25.3% (59 individuals) have indicated involvement for 1-2 years. Additionally, 12.9% (30 individuals) have specified involvement for 6-10 years.

The profile presented herein offers valuable insights into the respondents' histories, highlighting their range of sports activities and the length of their engagement.

2.1. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs

The indicator "Coaches cultivate a constructive and encouraging team ambiance" exhibits the highest mean score of 2.60, accompanied by a standard deviation of 0.72. The indication obtained the highest ranking, indicating a solid consensus among players about the effectiveness of their coaches in fostering a pleasant and supportive team atmosphere. The finding suggests that coaches' interpersonal and team-building abilities are widely regarded as efficacious, a crucial element in the advancement of athletes. Recent research has provided empirical evidence supporting the notion that a favorable team atmosphere substantially enhances the overall well-being, motivation, and performance of athletes (Fisher, Taylor, & Shaw, 2020).

In contrast, the indication "The coaches in my sports program possess a profound comprehension of the skills and strategies necessary for our sport" had the lowest mean score of 2.41, accompanied by a standard deviation of 0.75. This particular indicator earned the tenth position in the ranking. This finding indicates that players tend to have a negative view or have a limited observation of this attribute in their instructors, suggesting a perceived lack of technical proficiency on the part of the coaches. The outcome may indicate a need for enhanced training or ongoing professional

development for coaches to bolster their comprehension of sport-specific methods and abilities. Existing scholarly research supports that a coach's technical expertise is crucial in achieving athletes, especially in intricate sports (Turnnidge, Côté, & Hancock, 2020).

The findings suggest that coaches, while effective in creating a nurturing and motivating atmosphere, may need more technical proficiency or a comprehensive understanding of the essential abilities and tactics required for their respective sport. This phenomenon can impede athletes' progress in terms of their technical skills and overall performance capacity. To effectively tackle this issue, it may be necessary for sports programs to prioritize the augmentation of coaches' sport-specific expertise by implementing specialized training initiatives and providing ongoing professional support. This emphasis is consistent with recent scholarly investigations highlighting the significance of ongoing professional development and coach education that prioritize enhancing technical and interpersonal competencies to facilitate successful coaching (McCullick, Blom, & Van Mullem, 2022).

2.2. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Program Design

According to the survey results, athletes' evaluations are quantified using mean scores and standard deviations and are then rated based on their replies. A higher mean value signifies a more substantial agreement or observation of the given attribute.

The indicator "Our program fosters collaboration and synergy among athletes" exhibits the highest mean score of 2.91 and a standard deviation of 0.84. This is of considerable importance since cultivating teamwork among athletes helps their athletic performance and fosters the development of their social skills and cognitive abilities. Recent research has provided empirical evidence supporting the notion that the integration of cooperation and collaboration within the realm of sports substantially enhances physical performance and psychological well-being (McEwan & Beauchamp, 2020).

In contrast, the minimum average score is 2.46, accompanied by a standard deviation of 0.68, which aligns with the signal, "The coaching program demonstrates a methodically structured and rigorously regulated framework." This indicator ranked ninth, suggesting that athletes exhibit a modest level of adherence to this particular feature. There is an inference that players may regard the program as deficient in structure or regulation, thereby impeding their growth and advancement. The outcome is consistent with the conclusions drawn from recent research that emphasizes the significance of a well-organized and well-controlled program in attaining consistent growth and advancement among athletes (Larson, Young, & Lee/2021).

The findings indicate that while the program successfully fosters cooperation and team synergy, it may need to improve inadequate structure and control. Athletes place significant importance on a meticulously structured framework, as it guarantees the achievement of training goals and maintains a continuous trajectory of improvement. To effectively tackle this issue, sports programs may be required to improve the structure and oversight of their training plans and frameworks. A study by Henriksen, Larsen, and Storm (2020) showed that structured programs provide

superior results in skill enhancement and total athletic performance.

The program is notable for its proficiency in fostering autonomy and cooperation, which are fundamental factors for athlete engagement and pleasure, as seen by the comparatively high ratings observed in collaboration and player participation throughout training. Nevertheless, enhancing the program's structural elements can mitigate the training experience, guaranteeing that athletes get the advantages of both collaborative efforts and a robust, well-regulated training milieu.

2.3. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Sports Facilities

According to the survey results, the evaluation yielded a maximum mean score of 2.82 and a standard deviation of 0.82. This result is associated with the criteria "Our program effectively utilizes the available resources for both training and competitions." This finding indicates a widespread consensus among players on using existing resources efficiently for training and competitive activities within their sports program. The significance of this component underscores the crucial role of strategic facility use in optimizing athletes' performance and program efficacy. Contemporary scholarly investigations indicate that the strategic exploitation of facilities is paramount in guaranteeing the effectiveness and triumph of athletic training programs, especially when resources are constrained (Heidari, Akbari, & Shadmehr, 2021).

Conversely, the indication "The university allocates funds towards enhancing and renovating sports facilities" has the lowest mean score of 2.35, accompanied by a standard deviation of 0.69. The obtained low score suggests that players hold a moderate level of observation or disagreement with the statement mentioned earlier, hence conveying a sense of unhappiness with the institution's financial allocation towards the upkeep or enhancement of sports facilities. This finding may indicate that insufficient allocation of resources towards enhancing facilities may diminish the athletes' overall training experience. Contemporary research underscores the significance of ongoing enhancements and financial commitments in facilities, as they play a pivotal role in guaranteeing superior training conditions that facilitate the growth of athletic abilities (Brennan & Farrell, 2020).

The findings suggest that players value the efficient use of current sports facilities but express a significant apprehension about the institution's financial commitment to improving and renovating these facilities. The insufficient allocation of resources can adversely affect the enduring viability of high-performance training programs and impede the institution's capacity to provide a contemporary and supportive training milieu. According to Robinson, Nichols, and Edwards (2019), empirical evidence indicates that the upkeep and periodic renewal of sports facilities have a crucial role in facilitating the development of athletes and enhancing their training environments.

Moreover, the calculated composite mean of 2.53 suggests that players have a modest level of perception about the quality and accessibility of the sports facilities offered by their respective universities. While some criteria, such as the use of facilities, have received favorable evaluations, other areas require improvement, such as the availability of high-quality

facilities and dedicated space for individual instruction. Resolving these deficiencies through augmented financial resources and improving facilities is expected to result in enhanced training results and greater athlete satisfaction. This assertion is substantiated by recent scholarly works that underscore the significance of sufficient resources in sports athletic programs (Eime et al., 2022).

2.4. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Safety Measures

Based on the findings, athletes usually concur that the program's dedication to safety positively influences their entire experience, a pivotal element in augmenting their engagement and well-being. The elevated rating within this area suggests that when athletes see safety as a primary concern, it amplifies their confidence in the program, potentially resulting in enhanced performance and increased engagement. Previous research has shown that placing a significant focus on safety within sports programs is associated with a favorable correlation between players' psychological well-being and general happiness (Gould et al., 2020).

In contrast, the indicated variable, "Our training sessions are equipped with readily available safety precautions, such as first-aid equipment and emergency plans," exhibits the lowest mean score of 2.47, accompanied by a standard deviation of 0.66. This finding indicates that athletes hold a moderate level of agreement or disagreement with the statement mentioned earlier, suggesting a sense of dissatisfaction with the level of preparation shown by safety equipment during simulated training sessions. This finding suggests that there may be a need for more emphasis on the systematic execution of safety measures, such as providing readily available first-aid equipment. Research indicates that the absence of prompt availability of safety protocols might undermine athletes' trust in their training setting, resulting in heightened psychological distress and worse athletic performance (Kerr et al., 2021).

The findings of this evaluation indicate that athletes have a positive perception of the program's overarching dedication to safety. However, there are apprehensions about the effective execution of specific safety measures, such as the accessibility of first-aid equipment during training sessions. Effectively addressing these gaps is essential to ensure that athletes have sufficient protection throughout their activity. Additionally, this may include offering supplementary training to coaches and staff members on emergency preparedness and strengthening communication strategies pertaining to safety protocols. The comprehensive integration of safety measures across all facets of training has the potential to enhance athlete self-assurance and cultivate a sports environment that is both safer and more conducive to productivity. Research has shown that sports programs that are well-prepared and include explicit safety standards not only safeguard players from injuries but also play a significant role in fostering their long-term growth and overall enjoyment (McLeod et al., 2019).

The calculated composite mean of 2.60 suggests that players exhibit a modest level of adherence to safety protocols within their respective sports programs. Although the program's commitment to safety is widely acknowledged, implementing practical enhancements in the accessibility and

dissemination of safety rules might significantly improve the training experience. A growing body of research continually emphasizes the significance of implementing complete safety protocols in sports. Consequently, it is essential for sports programs to prioritize the systematic assessment and reinforcement of these measures to safeguard the overall welfare of players (Meeuwisse et al., 2021).

2.5. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Monitoring and Evaluation

The findings of this study indicate a widespread consensus among athletes on the excellent impact of the existing assessment procedures on their athletic progress. This underscores the need to conduct thorough assessments to facilitate the development of athletes and guarantee their ongoing enhanced performance in their respective sports. Recent studies have shown that consistent and constructive feedback plays a pivotal role in the growth and advancement of athletes, resulting in heightened levels of motivation and enhanced performance (Santos et al., 2020).

On the contrary, the indication "Athletes are afforded opportunities to establish individual performance objectives" has the lowest mean score of 2.42, accompanied by a standard deviation of 0.76. This finding implies that athletes have a moderate level of agreement or disagreement with the statement mentioned earlier, reflecting a sense of discontent with the available options for creating personal goals. As mentioned earlier, the outcome suggests that the program should prioritize implementing personalized performance plans and encourage athletes to actively participate in their goal-setting endeavors. Research findings indicate that using tailored goal-setting strategies can significantly augment an athlete's motivation and sustained involvement in the activity (Hodgson et al., 2019).

The findings suggest that athletes acknowledge the beneficial influence of assessments on their growth but express apprehensions about how assessments facilitate personal goal-setting and the promptness of feedback obtained from coaches. It may be necessary for programs to prioritize enhancing these domains via the incorporation of expanded organized avenues for athletes to actively engage in establishing their performance objectives and by guaranteeing that coaches provide timely and personalized feedback after assessments. According to Toering et al. (2021), empirical evidence substantiates that athletes who engage in goal-setting activities and get consistent and prompt feedback are more inclined to sustain motivation and enhance their performance potential.

The calculated composite mean of 2.57 suggests that athletes exhibit a modest level of adherence to the monitoring and assessment procedures within their respective programs. Although there exists a certain degree of contentment with the assessment processes, significant enhancements are essential to cultivate personal goal-setting and augment feedback mechanisms. Strategies that foster athlete engagement and provide timely assistance are expected to positively impact their holistic development and overall satisfaction with the coaching program.

2.6. Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Technology Use

The present evaluation investigates the efficacy of technology integration in training, its impact on skill development, and the level of clarity provided to athletes on using technological instruments. The table presents statistical measures such as mean scores, standard deviations, and rankings for each metric, giving valuable insights into how much technology facilitates athletes' performance and training.

The evaluation yielded a maximum mean score of 2.91 and a standard deviation of 0.85. This result confirms that "Technology plays a pivotal role in augmenting our overall sports experience." This finding indicates a widespread consensus among players on enhancing their sports experience via technology. The significance of this indicator underscores the crucial role that technology plays in contemporary coaching programs, specifically in terms of offering novel approaches to monitor performance, augment learning, and increase results. Multiple recent studies have provided empirical evidence in favor of this perspective, demonstrating that incorporating technology into sports training positively affects athlete engagement and performance (McCarthy et al., 2021).

Conversely, the indication "Fitness tracking applications facilitate the monitoring of our physical advancement" has the lowest mean score of 2.45, accompanied by a standard deviation of 0.81. This finding indicates that athletes have a moderate level of observation or disagreement with the statement above, reflecting a sense of discontent with the use or accessibility of fitness monitoring technology. This suggests that there may be a failure to use the technology inside the program entirely or that the athletes may need more access to or comprehension of these tools. According to Stoszowski and Collins (2019), empirical evidence suggests that fitness tracking and monitoring systems yield significant advantages for athletes and coaches, providing valuable insights into physical performance and growth.

The findings indicate that athletes acknowledge the general usefulness of technology in augmenting their sports experience. However, there is potential for improvement in the precise use of fitness monitoring programs and the provision of clear guidance on utilizing technological tools. It is essential for programs to prioritize the provision of enhanced accessibility to fitness monitoring technologies and comprehensive training in their use to optimize the advantages offered by technology. For athletes, engaging in this practice might facilitate a more holistic comprehension of their physical development, potentially resulting in enhanced performance results. Research has shown that providing appropriate tools and information to athletes for monitoring their development is associated with a higher likelihood of sustained motivation and active participation in their training regimen (Bishop & Goodyear, 2020).

The calculated composite mean of 2.57 suggests that athletes exhibit a modest level of awareness about the use of technology in their training regimens. While many facets of technology integration, such as the analysis of videos and the grasp of game strategies, are generally regarded favorably, there is a need for more advancement in areas such as fitness monitoring, and the comprehensibility of training focused on

technological instruments. The enhancement of these areas has the potential to augment the total efficacy of technology in sports training, hence affording players with improved resources for their respective growth.

Table 2. Summary on the Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs

INDICATORS	MEAN	SD	INTERPRETATION	RANK
1. Qualified Coaches	2.50	0.35	Disagree / Slightly Observed	6
2. Program design	2.59	0.35	Agree / Moderately Observed	2
3. Sports Facilities	2.53	0.37	Agree / Moderately Observed	5
4. Safety Measures	2.60	0.37	Agree / Moderately Observed	1
5. Monitoring and Assessment	2.57	0.39	Agree / Moderately Observed	3.5
6. Technology Use	2.57	0.37	Agree / Moderately Observed	3.5
Overall Mean	2.56	0.16	Agree / Moderately Observed	

2.7. Significant Difference in the Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Sex

The findings of the comprehensive examination suggest that there is not a statistically significant disparity between male and female players in their appraisal of school-based sports coaching programs. The indicator "Qualified Coaches" has a maximum t-value of 2.07 and a significance value of 0.15. Consequently, the null hypothesis is accepted, indicating no statistically significant disparity in the evaluations of coaches' credentials between male and female players. This study's findings suggest a lack of significant gender disparity in athletes' perceptions of their coaches' competence and the overall quality of coaching. This is consistent with previous research indicating that gender does not typically exert a substantial influence on athletes' evaluations of coaching quality (Lee & MacLean, 2019).

Based on the obtained t-value of 0.00 for the indicator "Technology Use," which is accompanied by a significance value of 0.96, it can be concluded that the null hypothesis is accepted. The present study demonstrates a comparable perception among male and female athletes about the use of technology within their respective sports programs. Emerging studies have indicated that technology is progressively assuming a more ubiquitous role in sports coaching, yielding equitable advantages for athletes of both genders. This is evident through various technological interventions such as video analysis and fitness tracking (Martínez-Santos et al., 2020).

The analysis reveals no statistically significant gender disparity across many variables, including qualified coaches, program design, sporting facilities, safety measures, monitoring and evaluation, and technology usage—

all significance values above the threshold of 0.05. The mean ratings for the total program are comparable, as men indicate a rating of 2.54, while females rate it at 2.59. As mentioned earlier, the consistency implies that the perception of school-based sports coaching programs is somewhat balanced amongst male and female players. This finding is consistent with current research that supports using gender-equitable techniques in sports coaching and program design (LaVoi & Becker, 2021).

The results indicate no substantial impact of gender on athletes' opinions about several domains of school-based sports coaching programs. This suggests that the programs are intentionally developed and executed to promote inclusivity and gender neutrality, hence fostering a fairer experience for athletes of all backgrounds. The findings presented in this study are promising. However, they underscore the significance of keeping this equilibrium and guaranteeing that coaching initiatives persist in addressing the requirements of athletes of both genders. Schools may enhance the athletic experience and growth for all participants by cultivating an atmosphere that promotes equal value and support from coaches and the program itself, irrespective of gender.

2.8. Significant Difference in the Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Sport

The comparative analysis reveals a need for more statistically significant variations in the players' evaluations of crucial elements across the various sports. The null hypothesis is accepted based on the obtained F-value of 0.81 for the indicator "Monitoring and Assessment," which is statistically significant at a significance level of 0.58. This finding suggests that athletes across all sports have a comparable perception of the monitoring and evaluation procedures. These findings are consistent with previous research indicating that the implementation of monitoring and evaluation practices in sports programs is often standardized across different fields to provide a consistent strategy to tracking and enhancing performance (Almarwaey, 2021).

The minimum F-value observed for the "Technology Use" indicator is 0.27, which is statistically significant at a significance level of 0.96. Consequently, the null hypothesis is accepted. The present study indicates that athletes across all sports have comparable perceptions of integrating technology into their training regimens. Existing research has shown that technology, including fitness monitoring and video analysis, has been prevalent in various sports to enhance performance and mitigate the likelihood of injuries. Consequently, it has become a customary component within various training regimens (Breitbach et al., 2021).

No statistically significant variations were seen across several factors, including competent coaches, program design, sports facilities, safety measures, and technology usage, depending on the participants' sport. This conclusion is supported by the fact that all significance values are above the threshold of 0.05. The overall mean scores show a notable degree of consistency since all sports evaluate the entire program within the range of 2.50 to 2.58. The observed consistency implies that players from all sports fields have comparable perspectives on the efficacy of their school-based sports coaching programs. As mentioned earlier, the observation aligns with research results indicating that organized coaching programs, when explicitly including

universal principles, effectively address a wide range of sports (Hodge & Smith, 2020).

The observed absence of substantial disparities implies that school-based sports coaching programs are consistently executed across diverse sports, offering athletes a comparable experience irrespective of their field of study. This conclusion is considered favorable as it signifies the equal and inclusive nature of the programs, guaranteeing that all athletes get advantages from meticulously designed coaching, integration of technology, and implementation of safety protocols. Nevertheless, it is essential for coaches and program planners to always prioritize the equitable allocation of attention and resources across all sports to preserve this equilibrium. The results further indicate that implementing standardized program elements, such as safety protocols and monitoring procedures, may benefit athletes participating in various sports. This notion is substantiated by recent studies conducted in sports coaching (Hardy et al., 2021).

2.9. Significant Difference in the Assessment of the Athletes of the Key Components and Characteristics of School-Based Sports Coaching Programs as to Duration

The findings indicate a need for more statistically significant variations in players' evaluations of prominent elements and attributes of sports coaching programs, contingent upon the length of their engagement. The null hypothesis is accepted based on the obtained F-value of 2.30 for the indicator "Program Design," which is statistically significant at a significance level of 0.08. These findings suggest that irrespective of the duration of athletes' participation in the program, their perspectives on program design remain consistent. Contemporary scholarly investigations provide empirical evidence in favor of the notion that athletes, irrespective of their time of engagement, prefer to view well-organized programs tailored to accommodate diverse levels of expertise equitably (Barker et al., 2020).

The null hypothesis is accepted based on the obtained F-value of 0.21 for the indicator "Qualified Coaches," which is statistically significant at a significance level of 0.89. This finding indicates that athletes, irrespective of their duration of participation in the program, maintain consistent views on the competence of their instructors. As mentioned earlier, this consistency is consistent with previous research indicating that coaching qualifications that are widely recognized and standardized coaching techniques result in consistent judgments of coaching quality across various groups of athletes (Martindale et al., 2021).

No statistically significant variations were seen across all parameters, including competent coaches, program design, sporting facilities, safety measures, monitoring and evaluation, and technology usage, depending on the athletes' engagement time. This conclusion is supported by the fact that all significance values are above the threshold of 0.05. The average scores exhibit a consistent pattern across all time categories, with scores falling within the range of 2.55 to 2.62. This finding indicates that irrespective of the duration of an athlete's involvement in the program, their experience and views remain stable. The observation above aligns with previous research suggesting that adeptly executed programs efficiently accommodate athletes with diverse expertise levels, promoting a steady and uniform experience (Brewer et al., 2021).

The observed absence of substantial disparities across various duration cohorts implies that school-based sports coaching programs are designed in a manner that ensures a uniform experience for athletes, irrespective of their length of participation. These programs include principles of fairness and are specifically tailored to cater to athletes of varying levels of expertise. Maintaining consistency is of utmost importance in establishing an equitable atmosphere whereby every participant is provided with assistance and recognition, irrespective of their degree of knowledge. The maintenance of this equilibrium necessitates the ongoing refinement of coaching programs' framework and the provision of equitable attention and development chances to all athletes, as shown by contemporary research in sports coaching (Ford et al., 2020).

2.10. Summary on the Assessment of the Respondents on the Level of Effectiveness of Student-Centered Learning Initiatives in Fostering Health and Consciousness

The findings suggest that athletes commonly perceive that school-based sports coaching programs are efficacious in augmenting their physical fitness, particularly in domains such as endurance and overall well-being. Nevertheless, the comparatively lower ratings for flexibility indicate that there exists a possible avenue for improvement within the given systems. It is recommended that coaches and program designers include additional flexibility and mobility training in their sessions to facilitate the development of a comprehensive physical fitness base among athletes. The mitigation of this deficiency can decrease the likelihood of injuries and augment the overall performance of athletes, as shown by contemporary research in sports science (Haff & Triplett, 2021).

The calculated composite mean score of 2.68 indicates that athletes express a modest level of satisfaction about the improvements in physical fitness that arise from their engagement in these programs. Although the overall effect is generally favorable, there exists potential for future improvement, especially in specialized domains such as adaptability. Through ongoing program refinement and a comprehensive approach to physical fitness, coaches may effectively promote balanced growth and sustain optimal levels of performance and well-being among athletes.

2.11. Impact of these Coaching Programs on Athletes as to Sports Performance

The findings indicate that athletes usually perceive that coaching programs positively impact their sports performance, namely in terms of fostering an atmosphere that enhances skill optimization and cognitive growth. Nevertheless, there exists potential for enhancement in domains such as cultivating athletes' self-confidence and honing their particular abilities. Coaches need to prioritize providing personalized feedback and reinforcement to facilitate athletes' holistic development, including physical competence and mental confidence within their respective sports. The literature highlights the significance of using coaching tactics that effectively address both the physical and psychological dimensions of growth, as they have resulted in more substantial performance enhancements (Gagné & Harari, 2021).

The calculated composite mean of 2.58 suggests that

players demonstrate a modest level of improvement in their sports performance due to participating in coaching programs. By refining these programs on an ongoing basis, coaches may effectively address the physical and cognitive dimensions of performance, hence facilitating players' attainment of complete and enduring growth in their particular sports. Assessment of the Respondents on the Level of Implementation of Green School Curriculum Predict in Combination of the Learning Initiatives in Fostering Health and Consciousness as to Social Performance.

2.12. Impact of these Coaching Programs on Athletes as to Overall Well-Being

The results suggest that athletes perceive the coaching programs as beneficial to their overall well-being, particularly in fostering resilience and enhancing their ability to confront challenges. However, there is room for improvement in areas such as discipline and motivation, which are crucial for sustained athletic success and personal growth. Coaches might consider incorporating more goal-setting techniques and reinforcement strategies to help athletes develop greater discipline and determination, as these are foundational skills for both sports performance and life achievements. Online research underscores the value of comprehensive coaching that addresses not only physical training but also the emotional and psychological needs of athletes (Bailey et al., 2020).

The composite mean of 2.57 indicates that athletes moderately experience improvements in their overall well-being due to the coaching programs. By focusing on holistic development, which includes emotional, mental, and physical health, coaches can ensure that athletes thrive both within their sports and in their personal lives.

Table 3. Summary on the Impact of these Coaching Programs on Athletes

INDICATORS	MEAN	SD	INTERPRETATION	RANK
1. Physical Fitness	2.68	0.33	Agree / Moderately Experienced	1
2. Sports Performance	2.58	0.35	Agree / Moderately Experienced	2
3. Overall Well-Being	2.57	0.35	Agree / Moderately Experienced	3
Overall Mean	2.61	0.21	Agree / Moderately Experienced	

2.13. Significant Difference in the Impact of Coaching Programs on Athletes as to Sex

The findings indicate no statistically significant disparities in the effects of coaching programs on male and female athletes across three domains: physical fitness, sports performance, and overall well-being. In the context of physical fitness, the obtained t-value of 0.02, accompanied by a significance value of 0.88, supports the acceptance of the null hypothesis. This implies that there is no statistically significant difference between male and female athletes regarding the influence of coaching programs on their physical fitness. This finding is consistent with existing research that suggests that male and female athletes may achieve comparable physical fitness improvements by participating in systematically designed coaching programs

(Bishop et al., 2020).

Based on the obtained t-value of 0.39 and a significance value of 0.53, it may be concluded that there is no statistically significant difference between male and female athletes in terms of their perceived enhancements in sports performance. According to Cumming et al. (2019), empirical evidence indicates that coaching programs aimed at improving sports-specific abilities, strategy, and competitive performance provide equivalent benefits for both genders.

Regarding general well-being, the t-value is 0.02, indicating statistical significance at a level of 0.90. Consequently, the null hypothesis is accepted. This finding suggests that both male and female athletes get comparable advantages to their holistic welfare, including mental and emotional psychological well-being, via engagement in coaching initiatives. According to a study conducted by Holt and Tamminen (2020), coaching programs that prioritize holistic development are likely to provide comparable well-being advantages across individuals of both genders. The comprehensive examination of all three variables reveals no statistically significant disparities depending on gender, as shown by a t-value of 0.05 and a significance value of 0.82. This suggests that the coaching programs have had a fairly uniform influence on athletes of both male and female genders.

The absence of substantial disparities between male and female athletes across the three variables implies that the coaching programs are adequately structured to provide equally advantageous outcomes for all participants, irrespective of gender. These findings underscore the inclusive nature of coaching programs and indicate that they are designed to facilitate comparable improvements in physical fitness, sports performance, and general well-being for athletes of both genders. The observation above is consistent with previous online research, which emphasizes the significance of implementing fair coaching methodologies that provide equal access to training, support, and resources for all athletes (LaVoi & Becker, 2020).

It is essential for coaches to persist in their efforts to preserve this equilibrium, so guaranteeing the inclusivity and advantageous nature of their programs for all athletes. The use of gender-neutral training approaches and provision of psychological support may significantly augment the overall athletic experience, hence fostering the continued success of both male and female participants within the same program framework..

2.14. Significant Difference in the Impact of these Coaching Programs on Athletes as to Sport

The findings indicate no statistically significant variations in the effects of coaching programs on players across various sports. Based on the analysis of physical fitness, the F-value obtained is 1.00, accompanied by a significance value of 0.43. Consequently, the null hypothesis is accepted, indicating that coaching programs have a comparable influence on players' physical fitness across different sports. The results of this study suggest that coaching programs consistently enhance physical fitness across various sports. This assertion is substantiated by previous research indicating that well-structured training programs tend to yield similar physical outcomes across diverse sports domains (Gabbett et al., 2020).

Similarly, the F-value on sports performance is 0.99, with a significance value of 0.44. This suggests that there is no

statistically significant difference between sports concerning enhancements in performance. This indicates that the coaching programs exhibit comparable efficacy in augmenting sports-specific abilities and competitive performance across other sports. The findings of a recent study support this outcome, suggesting that programs that prioritize fundamental athletic concepts may provide comparable levels of effectiveness across different sports (Ford et al., 2019).

The obtained F-value for the variable representing total well-being is 0.64, statistically significant at a significance level of 0.72. Consequently, the null hypothesis is accepted. The findings of this study suggest that players across all sports exhibit comparable improvements in their overall well-being as a consequence of engaging in coaching programs. According to Fraser-Thomas and Côté (2020), coaching programs that use a comprehensive approach generate similar psychological and emotional advantages for athletes participating in various sports.

The comprehensive examination of all three indicators reveals no statistically significant variations depending on sport, as shown by the F-value of 0.39 for the total effect and the significance value of 0.91. The findings above suggest that coaching programs consistently impact the physical fitness, sports performance, and overall well-being of players across various sports.

The absence of substantial disparities across sports indicates that coaching programs have been successfully crafted to provide fair and equally advantageous outcomes for players across diverse fields. Coaching programs' demonstrated versatility is evident in their capacity to facilitate increases in physical fitness, sports performance, and general well-being for players across various sports. The shown consistency is by existing studies on the efficacy of multi-sport coaching approaches, prioritizing the development of fundamental athletic abilities that can be transferred to many sports (Bailey et al., 2021).

To sustain this equilibrium, coaches must persist in using comprehensive and flexible training techniques that effectively target both sport-specific and general athletic talents. This approach may achieve a consistent degree of growth and progress among players throughout various sports.

2.15. Significant Difference in the Impact of these Coaching Programs on Athletes as to Duration of Involvement

The findings indicate no statistically significant variations in the effects of coaching programs on athletes, regardless of the length of their participation. In the context of physical fitness, the F-value obtained is 2.35, which meets the predetermined significance level of 0.07. Consequently, the null hypothesis is accepted. This finding suggests a lack of statistically significant variation in the effects of coaching programs on the physical fitness of athletes with varying degrees of engagement. The results of this study align with previous research that suggests well-designed coaching programs may lead to comparable improvements in physical fitness throughout different engagement periods, provided that the program is maintained over time (Turner & Stewart, 2019).

The sports performance analysis reveals an F-value of 0.47 and a significance value of 0.71. These results suggest no statistically significant difference in the engagement period. These findings indicate that athletes exhibit comparable

enhancements in sports performance irrespective of the duration of their involvement in the program. The findings presented in this study are consistent with other research, indicating that acquiring fundamental skills and enhancing performance tend to stabilize after athletes attain a certain level of proficiency. This stability is not significantly impacted by the length of time participating in the program (Côté et al., 2020).

In terms of total well-being, the F-value obtained is 1.07, which is statistically significant at a significance level of 0.37. Consequently, the null hypothesis is accepted. This finding suggests that athletes undergo comparable enhancements in their overall state of health and wellness regardless of the length of their participation. Programs that use a comprehensive approach to athlete development often provide consistent emotional and mental health advantages, irrespective of the duration of the athletes' participation (Fraser-Thomas & Côté, 2020).

The comprehensive examination of all three indicators reveals no statistically significant variations depending on duration, as shown by the F-value of 2.50 for the total effect and the corresponding significance value of 0.06. These findings indicate that coaching programs have a consistent and predictable effect on athletes' physical fitness, sports performance, and general well-being, irrespective of the duration of their participation in the programs.

The absence of substantial disparities across different lengths of engagement implies that the coaching programs are effectively structured to ensure the provision of fair advantages to athletes, regardless of their length of commitment. This finding demonstrates the programs' flexibility and efficacy, suggesting that athletes of all levels of expertise may get comparable advantages from their involvement. According to Bailey et al. (2020), well-designed and uniform programs have the potential to provide enduring advantages for athletes, irrespective of the length of their engagement.

3. Conclusion

1) The correlation between the prevalence of female players and their sustained commitment to soccer and basketball indicates that sports programs foster long-term engagement among athletes. Nevertheless, the significant focus on these particular sports may indicate a need to broaden the chances available for other sports and provide equitable support for both male and female players.

2) Although players usually evaluate coaching programs favorably in aspects such as teamwork, safety, and the use of technology, there is a need for growth in areas such as sports skill understanding and money for facilities. This suggests that coaching programs might benefit from more resources and the use of contemporary training methodologies to effectively address the athletes' requirements and enhance the overall quality of the program.

3) The absence of substantial disparities in athletes' evaluations based on gender, sport, or length implies that the coaching programs exhibit a relatively moderate level of effectiveness. Nevertheless, this observation suggests the need for more individualized strategies to effectively cater to the distinct requirements of various athlete cohorts, such as coaching tailored to certain genders or resources relevant to particular sports.

4) The coaching programs demonstrate a modest positive influence on physical fitness, sports performance, and well-

being, indicating their potential benefits. However, greater effectiveness might be achieved by implementing focused enhancements. The program's emphasis on endurance, resilience, and problem-solving underscores its potential to cultivate not just athletic abilities but also comprehensive life skills. However, it is essential to place more emphasis on the development of technical skills.

5) The lack of substantial variations across athlete profiles implies that the programs share consistent advantages. However, these programs may not possess the adaptability necessary to accommodate athletes' unique development and special requirements, considering factors like their sport, level of expertise, or history. These findings suggest a potential need to implement adaptive training methods that provide individualized attention.

6) The many obstacles coaches encounter, including resource constraints, cultural impediments, insufficient opportunities for professional growth, and the need to manage both academic and athletic responsibilities, indicate the need for structural modifications to enhance the assistance coaches provide. To improve program delivery and results for athletes, it is imperative to tackle these problems by equipping coaches with improved resources, training, and support structures to overcome these obstacles effectively.

7) Expand the range of sports offered in school-based programs to encourage participation beyond soccer and basketball. Provide equitable support for both male and female athletes across a wider variety of sports by offering specialized coaching, facilities, and resources to ensure diverse athletic development.

8) Allocate more funding to improve sports facilities and purchase modern equipment. Invest in up-to-date training methodologies and sports science practices to enhance coaches' ability to develop athletes' skills comprehensively. Ensure that coaches have access to the latest instructional tools to improve athletes' technical development.

9) Introduce more personalized coaching strategies that cater to the unique needs of athletes based on gender, sport, and experience level. This may include gender-specific coaching methods, sport-specific resources, and individualized training plans that address the diverse needs of athletes.

10) While endurance, resilience, and life skills are being developed, coaching programs should also place a stronger emphasis on the development of technical sports skills. Coaches should prioritize drills and exercises that enhance specific athletic skills related to each sport, ensuring that athletes improve their technical performance.

11) Develop adaptive training programs that accommodate the individual progression and needs of athletes. This could involve creating flexible training modules that can be adjusted based on the athlete's level of expertise, sport, or background, allowing for a more customized development experience.

12) Address the challenges faced by coaches by providing better access to professional development opportunities, improved facilities, and sufficient financial support. This includes offering continuous education in modern coaching techniques and equipping coaches with resources to better manage the balance between athletes' academic and athletic commitments. Additionally, provide communication tools and strategies to overcome cultural and linguistic barriers.

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