

The Role of Volleyball in a Guidance Program for Reducing Aggressive Behavior and Boosting Academic Achievement Among Students

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Abstract:

This study explore the effectiveness of a volleyball-based guidance program in reducing aggressive behavior and increasing academic achievement in students aged 12–13 years. Objectives: 1) Examine the relationship between aggressive behavior and academic achievement. 2) Evaluate the effectiveness of a volleyball-based guidance program in mitigating aggression. 3) Assess the program's impact on improving students' academic performance. The approach was a descriptive and experimental study. whereas, the sample of students was randomly pared into an experiment and control group, with no significant differences in aggressive behavior and academic performance . In the experimental group, participants completed a volleyball-oriented guidance program for 6 weeks, which comprised 16 sessions. Aggressive behavior was assessed with a validated 39-item questionnaire, and academic performance was assessed through school records. Data were analyzed statistically with t-tests for pre- and post-test differences applied. A combined effect of the intervention was significant in reducing aggressive behavior in the experimental group (self-directed, other-directed and property-directed) compared to the control group. Moreover, participation in the guidance program was associated with statistically significant improvements in academic achievement for the experimental group, further indicating the effectiveness of the guidance program in promoting emotional regulation, cooperation, and attention. Through this study, the students who followed the volleyball-based counseling program showed decreased level of aggressiveness and improved their academic performance significantly. The current study highlights the potential of incorporating team sports such as volleyball into the school curriculum as a strategy to ameliorate behavioral problems for social and academic benefit.

Keywords: Volleyball, Aggressive Behavior, Educational strategies, Sports psychology, Academic Achievement

1. Introduction

Aggressive behavior is considered one of the critical educational issues that can impede the progress of the educational process. It has the potential to cause academic failure for students and significant challenges for teachers and school administrations. This behavior can diminish the positive outcomes of education (1). Aggressiveness is not limited to emotionally disturbed students but can manifest in a wide range of students due to various reasons, including environmental or social factors. While aggression is a common behavior across many societies, it varies in intensity. Certain degrees of aggression are socially accepted as a form of self-defense or as a means of protecting others' rights, whereas other forms are deemed unacceptable and often disruptive (2).

Students exhibiting unacceptable aggressive behaviors frequently cause considerable problems in classrooms. Such behaviors negatively impact both the students involved and their peers, leading to adverse effects on academic achievement. Academic performance, often measured by grades, serves as a standard to evaluate a student's educational level. However, it is influenced by numerous variables, including the environment in which a student is raised and the social circles they engage with (3). Studies investigating the relationship between aggression and academic achievement have yielded mixed results. Some research highlights a clear correlation between the two, while others refute this link(4).

This research derives its importance from addressing this gap and aims to explore the relationship between aggressive behavior and academic achievement. Based on the researcher's expertise and in alignment with several studies, it is posited that aggressive behavior has become a defining characteristic of the current era. Such behaviors are increasingly evident among students, whether directed towards peers, school property, or other institutions (5). Manifestations of aggression include physical altercations, verbal abuse, theft, vandalism within educational institutions, and, in extreme cases, acts of violence towards teachers and school administrators.

The significance of this study lies in its contribution to improving the educational process through two primary phases (6). The first phase seeks to examine the relationship between aggressive behavior and academic performance. Subsequently, the second phase aims to mitigate aggressive behavior by developing a guidance program centered on volleyball games and associated small-scale activities. This approach is proposed as a mechanism to reduce aggression, as unchecked aggressive tendencies may escalate over time, posing significant risks. In later developmental stages, such aggression can be redirected towards society and legal systems, potentially manifesting as defiance, frustration, or illegal activities. Understanding this behavior and its impact on academic achievement is therefore essential for both individual and societal well-being (7). Aggressive behavior constitutes a significant educational challenge that adversely impacts the educational process. It contributes to students' academic failure and creates difficulties for teachers and school administrators. This aggressive conduct, which encompasses acts of aggression toward others or property (8), is often observed among students due to environmental and social factors. The core issue lies in the potential of such behavior to negatively affect academic achievement and hinder positive interaction within classroom environments.

Based on that, the study objectives will be as follows:

- To investigate the relationship between aggressive behavior and academic achievement among students.
- To mitigate the intensity of aggressive behavior in students through a guidance program based on volleyball activities.
- To evaluate the effectiveness of this guidance program in enhancing students' academic performance.

Further refinements or additional details may be incorporated to provide a more comprehensive articulation of these points.

2. Methode

Study Design

The researcher employed both descriptive and experimental methodologies in this study. The descriptive approach was utilized to collect data and information related to the effectiveness of team-based play in reducing aggressive behavior among primary school students (Rebane, 2021). The experimental approach was employed to implement a volleyball-based program aimed at mitigating aggressive behavior and enhancing academic achievement.

Study Participants:

The sample comprised students purposefully selected due to their limited prior experience with basic volleyball skills. Two groups were chosen for the study, with participants aged between 12 and 13 years.

Training Protocol:

Step 1: Initial Assessment of Academic Achievement and Aggressive Behavior
The initial step involved determining the students' academic achievement by calculating the overall average of their grades. Simultaneously, efforts were made to explore whether a relationship existed between aggressive behavior and academic performance within the sample. This foundational assumption guided the research; had the results contradicted this premise, further research procedures would not have continued (9).

On December 5th, standardized forms measuring aggressive behavior were distributed to the primary research sample, while academic achievement data were obtained from the school administration (10). The Pearson correlation coefficient was applied to determine the existence and strength of a relationship between aggressive behavior and academic performance. The results are detailed in

Table 1, which presents the correlation coefficient values between aggressive behavior and academic achievement.

Variables	Correlation Coefficient (r)	Sig. Value	Significance Level
Behavior / Achievement	0.254	0.000	Significant

The table reveals that the calculated value is smaller than the critical table value at a significance level of 0.05. This indicates a negative correlation, implying that as levels of aggressive behavior increase, academic achievement decreases. The researcher attributes this relationship to the challenges faced by children in environments characterized by conflict and instability. The volatile political and social conditions make it difficult for students to adapt to rapid societal changes, often resulting in aggressive behavior towards peers and their surroundings, and sometimes even directed inward (11).

Furthermore, the presence of aggressive students can influence others to adopt similar behaviors, either as a form of self-defense or mimicry, leading to an escalation of aggression. Parental influence may also play a role in shaping these behaviors, as highlighted in the study by(12), which found a connection between aggressive behavior and parental stress (1).

Aggressive behavior is recognized as a significant behavioral issue that disrupts classroom learning. Aggression exhibited by one student can prompt an increase in aggressive acts among peers, creating challenges for other students in the same classroom. This not only hampers their ability to learn but also impedes healthy social interactions. The presence of aggression negatively affects the educational environment, preventing the creation of a conducive and nurturing classroom atmosphere, thereby lowering academic performance levels. With this, the first objective of the research has been achieved (13).

Step 2: Ensuring Group Equivalence

On December 10th, aggressive behavior forms were distributed to verify the equivalence of the experimental and control groups prior to the intervention. A comparison was made between the academic achievement and aggressive behavior results of both groups to ensure parity before proceeding with the experiment.

Table 2. Differences Between the Experimental and Control Groups in Pre-Test Independent Samples

Variable	Group	Mean (M)	Std. Deviation (SD)	T-Value	Significance Level
Aggression Towards Self	Experimental	47.8	3.3	-0.21	Not Significant
	Control	47.5	3.0		
Aggression Towards Others	Experimental	72.6	3.2	0.55	Not Significant
	Control	70.8	2.8		
Aggression Towards Property	Experimental	31.5	4.7	0.44	Not Significant
	Control	31.8	4.5		
Total Aggression	Experimental	140.8	5.7	-0.22	Not Significant
	Control	139.4	5.1		
Academic Achievement	Experimental	45.9	2.2	-0.33	Not Significant
	Control	47.2	3.0		

based on the table, it is evident that there are no statistically significant differences between the two groups in terms of academic achievement, indicating equivalence between them.

A pilot study was conducted on Class (D) from the same educational level. The purpose of this study was to assess the validity and reliability of the aggressive behavior scale and its suitability for the study sample. Additionally, one of the guidance units was applied to evaluate the participants' responsiveness.

The validity of the scale was established by presenting it to four experts specializing in psychology, scientific research, and statistics. This process ensured the clarity and simplicity of the statements for the selected age group during their responses. Reliability was measured using the split-half method, yielding a reliability coefficient of 0.86, indicating that the scale possesses a high degree of reliability (14).

The program developed for this study includes specific guidelines on how to interact during gameplay, encouraging discussion to help mitigate aggressive behaviors, and motivating students to adopt cooperative behaviors as required by the context of the game. It also incorporates essential feedback and modeling strategies. Human behavior can be shaped through modeling and observation of others' behaviors, enabling individuals to acquire positive behaviors.

The program's steps began with identifying needs, which form the foundation of the planning process. This was followed by prioritizing these needs to guide assistance effectively, setting objectives based on these priorities, selecting activities to achieve the objectives, and finally evaluating the program.

To measure the effectiveness of the guidance program, volleyball was used as a medium for intervention. It was hypothesized that students could express their emotions through gameplay, allowing for behavioral correction and emotional regulation. By training students to control and manage their emotions, they could avoid undesirable behaviors. Volleyball, being a team sport, fosters teamwork and cooperation, providing repeated opportunities to reinforce these behaviors during play. This repetition promotes the adoption of collaborative traits, which may become integral to students' daily interactions.

The primary objective of the program is to mitigate aggressive behaviors through guided play and counseling. These behaviors can be addressed by integrating group counseling with structured gameplay in guidance sessions. These sessions provide students with opportunities for simple discussions to raise awareness about the negative impacts of aggression, its manifestations, and consequences. The aim is to instill cooperative traits, self-expression, self-confidence, and patience, enabling students to overcome internal anger, manage their emotions, and engage with others in a positive and harmonious manner (16).

Given that this study aims to evaluate the impact of a volleyball-based guidance program on reducing aggressive behaviors and enhancing students' academic achievement, the program was designed to align with the nature of the game. The most prominent and frequently observed behaviors identified through the questionnaire were targeted for intervention. Based on the questionnaire results, the researcher formulated the program's objectives, identified the students' guidance needs, and explored how these needs could be addressed within the context of volleyball. Activities were then developed to fulfill these needs, ensuring their application would not only benefit students during gameplay but also equip them with transferable skills for real-life interactions. Relevant literature and similar resources were also reviewed to support the program's objectives.

The guidance program does not solely rely on traditional counseling methods. It incorporates interactive questioning, where the instructor or program participants pose scenarios and questions related to real-life examples connected to the discussion topic. The instructor provides constructive evaluations of the students' behaviors, offering feedback in a playful manner consistent with the rules

of the game. This approach allows students to self-assess their behaviors without feeling criticized or diminished.

Additionally, students are given simple tasks to complete, such as preparing brief reports on a common behavioral issue and its associated risks, often in collaboration with their families. These strategies promote active engagement, self-reflection, and the development of positive behaviors, all within a supportive and interactive learning environment.

The program incorporated video demonstrations of volleyball gameplay, emphasizing collaboration and teamwork. The guidance program was developed based on prior studies addressing similar topics and was reviewed by experts in psychology to ensure its validity. It was structured into **16 sessions**, each lasting 40 minutes, divided into three units over a period of six weeks, with sessions held three times per week. Certain sessions, scheduled as the last lesson of the day, were extended to 90 minutes to ensure comprehensive application. The students agreed to complete these extended sessions outside of regular school hours.

A suitable venue was prepared for the sessions, ensuring a calm and comfortable environment for participants. This was located in a designated corner of the classroom, equipped with appropriate seating arrangements. The program was implemented with students in the experimental group, selected based on their initial familiarity with volleyball. This reduced the need for extensive explanations of basic skills. The researcher aimed to provide opportunities for emotional expression during gameplay while fostering cooperative behavior among participants.

Study Analysis

To measure aggressive behavior, a **39-item questionnaire** was utilized, structured around three dimensions of aggression:

1. **Aggression Toward the Self** (13 items):
Examples include items 3, 8, 12, 13, 15, 24, 25, 32, 33, 35, 27, 38, 65.
2. **Aggression Toward Others** (18 items):
Examples include items 1, 2, 4, 6, 9, 10, 17, 18, 19, 20, 21, 28, 29, 36, 39, 90.
3. **Aggression Toward Property** (8 items):
Examples include items 5, 11, 22, 23, 26, 34, 27, 57, 31, 8, 40.

The questionnaire employed a **five-point Likert scale** with the following response options:

- **Strongly Agree:** 5 points
- **Agree:** 4 points
- **Neutral:** 3 points
- **Disagree:** 2 points
- **Strongly Disagree:** 1 point

The reliability of the questionnaire was determined using the test-retest method, conducted five days apart. The correlation coefficient between the two tests was **0.81**, indicating strong reliability. Validity was assessed through **face validity**, where the questionnaire was reviewed by experts in psychology, testing, and measurement. This ensured the clarity, relevance, and appropriateness of the items for the target population.

3. Result

The table below demonstrates that for the experimental group, the differences in aggression levels across all dimensions—toward self, others, and property—are statistically significant. This indicates that the intervention program had a measurable impact on reducing aggressive behaviors. The program provided opportunities for students to actively engage in improving their behaviors, releasing emotional tension, fostering self-awareness, and exploring solutions to problems through discussions with peers and the researcher. Additionally, it encouraged a spirit of cooperation and fair competition during sports activities, contributing significantly to reducing aggression levels.

Table 3. Pre- and Post-Test Results for the Experimental Group Using Paired Sample T-Test

Dimension	Experimental Group	Experimental Group	T-	Significance
	(Pre-Test)	(Post-Test)	Value	Level
	Mean	SD	Mean	SD
Aggression Toward Self	47.8	3.3	17.5	2.11
Aggression Toward Others	72.6	3.2	20.8	2.5
Aggression Toward Property	31.5	4.7	11.8	5.5
Total Aggression	140.8	5.7	44.8	6.1

Note: Results are significant at the 5% significance level.

These findings are consistent with prior studies, such as those by **Jarareh, Mohammadi, Nader, and Moosavian (2016)**, **Koolae, Vazifehdar, Bahari, and Akbari (2015)**, and **Nekah (2015)**. In contrast, the control group, which did not participate in group guidance or structured opportunities for emotional release, showed no significant improvement. While the teacher occasionally attempted to guide cooperative behaviors, the lack of intensive intervention resulted in minimal behavioral changes.

The Role of Team Sports in Reducing Aggression

Team plays, particularly in volleyball, serves as a natural context for self-expression and is a highly effective means for alleviating tension and stress. Students, especially during adolescence, encounter various social influences and psychological challenges, compounded by physiological changes. These factors create internal and external conflicts, which, if not addressed, can escalate aggression. Engaging in structured physical activities can help students achieve emotional balance while improving their mental and physical health.

Sports, particularly team-based activities such as volleyball—have proven to be powerful tools in fostering psychological, social, and physical harmony. Specialists consistently recommend integrating sports into educational programs to reduce undesirable behaviors. Volleyball promotes group integration, adherence to game rules, and the development of sportsmanship, helping students accept both victories and defeats gracefully.

Psychological Foundations of Play

Most psychological theories agree that play integrates physical, emotional, and cognitive functions, channeling excess energy in a constructive manner. Thus, play becomes a behavior-modifying tool, contributing to the development of socially and emotionally well-adjusted individuals. This study reinforces the importance of utilizing structured sports activities, such as volleyball, as effective interventions in educational and behavioral programs.

Table 4. Pre- and Post-Test Results for Academic Achievement in the Experimental Group

Test	Experimental Group	Experimental Group	T-Value	Significance
	(Pre-Test)	(Post-Test)		Level
	Mean (M)	Std. Deviation (SD)	Mean (M)	Std. Deviation (SD)
Achievement	45.9	2.2	60.0	2.2

Note: Results are significant at the 5% significance level.

Aggressive behavior is one of the critical behavioral issues that disrupt the educational process. "The presence of aggression in a single student can lead to an increase in aggressive behaviors among other students. This behavior not only creates difficulties for others in the classroom but also hampers effective learning and obstructs healthy social interactions among students. Furthermore, it interferes with the educational process by preventing the creation of a conducive learning environment within the classroom, ultimately resulting in a decline in students' academic performance.

A child's tendency to exhibit overt aggression depends on several factors, including "the intensity of their desire to harm or cause pain to others, the degree of frustration and provocation from the environment that stimulates aggressive tendencies, and the level of anxiety or guilt associated with their aggressive behavior.

The significant improvement in academic achievement in the experimental group, as reflected in the table, indicates that reducing aggressive behaviors through structured interventions positively impacts students' learning outcomes. By addressing aggression and fostering a supportive and cooperative classroom atmosphere, the program facilitated not only behavioral improvements but also enhanced academic performance. This underscores the importance of addressing behavioral challenges as part of comprehensive educational strategies.

Table (5): Post-Test Results for the Experimental and Control Groups Using Independent Samples T-Test

Dimension	Experimental Group (Post-Test)	Control Group (Post-Test)	T-Value	Significance Level
	Mean (M)	Std. Deviation (SD)		
Aggression Toward Self	17.5	2.11	48.0	3.0
Aggression Toward Others	20.8	2.5	70.7	2.8
Aggression Toward Property	11.8	5.5	31.8	4.6
Total Aggression	44.8	6.1	139.9	5.1

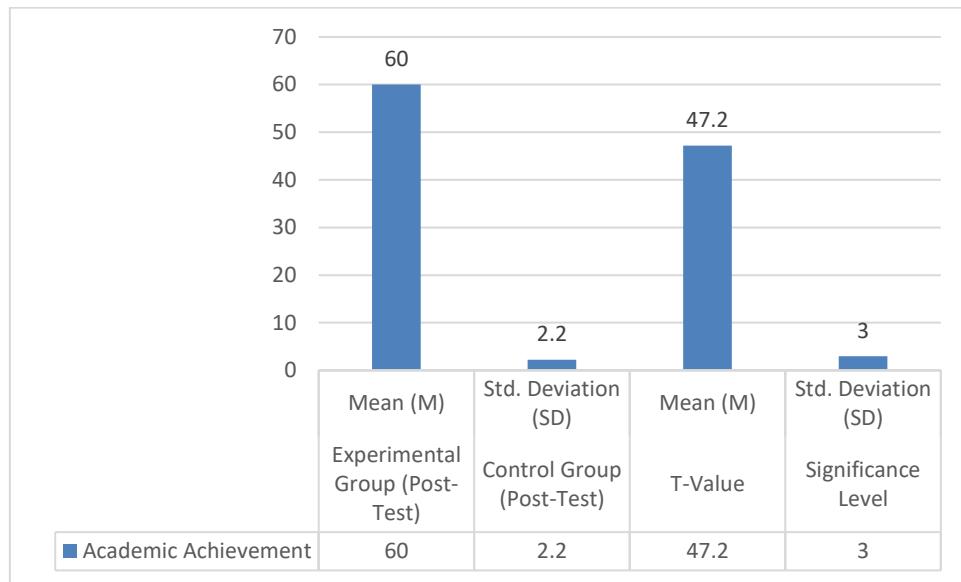
Note: Results are significant at the 5% significance level.

The results indicate a significant reduction in aggressive behaviors across all dimensions in the experimental group compared to the control group, highlighting the effectiveness of the implemented guidance program. The program's design and alignment with the developmental characteristics of this age group played a crucial role in achieving these outcomes.

By creating a psychologically supportive environment, the program facilitated positive interactions among participants in the experimental group, enabling them to better manage their behaviors. It taught them strategies to handle challenging situations during skill execution and allowed them to reflect on their aggressive behaviors. The program emphasized correcting these behaviors by integrating moral, ethical, and religious values into sports activities.

Moreover, the program employed dialogue and encouraged participants to confront and manage stressful situations during skill performance, promoting the acquisition of positive behavioral patterns. This approach helped students regulate their emotions, develop effective communication skills with peers and teachers, and adopt cooperative behaviors.

The guidance program also enabled participants to transfer the experiences and skills gained during the counseling sessions to gameplay. This integration further extended to real-life scenarios, equipping students with mechanisms to modify and adapt their behaviors effectively. The program's success underscores its potential as a practical and impactful tool for fostering behavioral and emotional improvements in educational and social contexts.



Note: Results are significant at the 5% significance level.

Figure 1. Post-Test Results and T-Values for the Experimental and Control Groups

The table above highlights the significant difference in academic achievement between the experimental and control groups, emphasizing the positive impact of the guidance program. The findings suggest that educational institutions play a pivotal role in mitigating undesirable behaviors, even though they may also serve as environments where students adopt negative behaviors from their peers. These behaviors can have detrimental effects on both individual academic performance and the classroom dynamic.

Aggressive behavior is a critical issue that disrupts the educational process. "Aggression exhibited by a single student often leads to an increase in aggressive behaviors among other students. This behavior not only creates challenges for learning within the classroom but also hinders healthy social interactions among students. Moreover, it interferes with the educational process by preventing the establishment of a conducive learning environment, ultimately leading to a decline in academic performance.

The results of this study, in conjunction with prior research, confirm that aggressive behavior negatively affects students' academic achievement. It not only impairs the aggressor's performance but also has a broader negative influence on their peers. These findings underscore the importance of addressing aggressive behavior in educational settings to foster a supportive and productive learning environment.

4. Discussion

The current study found a program specific to volleyball-guided students aged 12–13 years to be significantly effective in decreasing aggressive behaviors and enhancing academic achievement. Finding these output results with regards to my research objectives confirm stating the relationship with aggression and academic performance as well as the effectiveness of the particular program to overcome this issue.

In the experimental group, the intervention was associated with significantly decreased aggressive behaviors across all dimensions (self, other, and property) relative to the control group [26]. The decrease in is linked to the structure of the program involving team interactions that bolster emotional expression and to cooperation and self-regulation strategies. The experimental group performed significantly better than the control group on the academic performance task, suggesting that treating behavioral problems can also lead to positive cognitive and educational outcomes. These findings contribute to the growing understanding that behavioral and emotional well-being are integral to academic success.

This study supports previous studies like those conducted by Jarareh et al. (2016) and Koolaee et al. (2015), highlighting the potential impact of organized sports participation on reducing aggression and facilitating social inclusion. However, it also offers new insights by using volleyball(s), as a medium for introducing intervention and showing how its distinctive nature with respect to building teamwork, regulating emotions, improving academic focus, etc. Whereas previous studies only addressed general physical activity, this research brings into focus the benefits of embedding counseling in sports programs.

The findings highlight the need for team sports to be woven into the school curriculum for behavioral and academic impact. The program's achievements showcase its ability to cultivate a culture of collaboration, decrease disruptions, and improve the learning atmosphere. Supporting emotional regulation and cooperative behaviors through such programs may combat the underlying drivers of aggression, providing longer-term benefits for students and communities alike.

One of the study's strengths is its innovative approach to integrating counseling with sports, providing a holistic method to address aggression and academic challenges. The program's reliance on validated tools and expert-reviewed methodologies further enhances its reliability. However, the study's limitations include its small sample size and focus on a specific age group, which may limit the generalizability of the findings. Additionally, cultural and environmental factors may influence the program's effectiveness in different settings.

5. Conclusion

According to the findings, the main results can be summarized as follows: There was a statistically significant relationship found between aggressive behavior and academic achievement, wherein each one can statistically be shown to produce the other; therefore, students who display aggressive behaviors tends to be yielding lower academic achievement. Furthermore, the volleyball-based guidance program proved to be very effective in decreasing aggressive behaviors in the experimental group as compared with the control group. Furthermore, the program helped to improve the academic performance of the students in the study, demonstrating the beneficial value of team-based sports and support programs in aiding the behavioral and educational growth of students. These findings enhance the body of literature about the connection between aggression and academic performance, while providing actionable solutions to decrease the effects of this relationship. It emphasizes the role of team sports programs as an extracurricular activity that can be utilized to reinforce the antecedent and consequential aspects of behavior modification in an educational setting, thus fostering the opportunity for schools to institute those programs and ultimately create a more peaceful and academically successful student body.

Recommendations for Practice or Policy

- Direct educational systems toward integrating extracurricular activities, particularly team sports like volleyball, as a core component of school programs.
- Develop similar guidance programs aimed at modifying negative behaviors and fostering cooperative behaviors.
- Train teachers in behavioral counseling methods that utilize team sports to enhance their classroom management skills.
- Strengthen partnerships between schools and parents to create a supportive environment for students and reduce psychological pressures that contribute to aggressive behavior.

Study Limitations

Study limitations include the small sample of students in a narrow age range (12–13 years), limiting generalization to other age groups or social contexts. Furthermore, not all environments or cultures may share the same affinity for using volleyball as a guiding tool.

Suggestions for Future Research

- Expand the scope of the study to include larger samples and diverse age groups to enhance the generalizability of the results.
- Investigate the impact of guidance programs based on other team sports or various activities to determine the relative effectiveness of each approach.
- Analyze the relationship between aggressive behavior and academic achievement across additional variables, such as gender, socioeconomic status, and social environment.
- Explore the long-term effects of such programs to assess the sustainability of their impact on behavior and academic performance.
- Utilize artificial intelligence technologies to analyze aggressive behaviors and develop tailored guidance programs that address the specific needs of each student.

Applicable Remarks

1. **Enhancing Behavioral Understanding:** The findings highlight the potential of guidance programs based on team sports as an effective tool for reducing aggressive behavior and improving academic performance. These programs can serve as targeted interventions to modify negative behaviors in school environments.
2. **Broad Implementation:** Integrating group activities into the curriculum has the potential to enhance not only the school environment but also the psychological and social well-being of students.
3. **Ongoing Teacher Training:** Training teachers to implement such programs and raising their awareness about the importance of sports activities in modifying student behaviors is essential for translating the findings into practice.
4. **Educational Policies:** The Ministry of Education should integrate team sports into both curricular and extracurricular activities as part of broader policies to improve the educational climate.
5. **Community Collaboration:** Strengthening collaboration between schools and families is crucial for creating a comprehensive environment that supports positive behavioral changes and sustainably reduces aggressive behaviors.

6. **Technology in Guidance:** Modern technologies, such as artificial intelligence, can be utilized to personalize guidance programs tailored to the specific needs of each student, thereby increasing the effectiveness of these programs in addressing aggressive behaviors.

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