

"Sports for Mental Nurturance": A Correlation Study on the Implementation of Sunshine Sports Policy and Positive Emotions in County-Level Primary Schools

Na Qing*

Philippine Christian University, Manila, Philippines

*Corresponding author (E-mail: naqin306@163.com)

ABSTRACT

This study aims to explore the intrinsic correlation between various implementation dimensions of the Sunshine Sports Policy and students' positive emotions in county-level primary schools, and provide empirical evidence for empowering students' mental health development through the implementation of sports policies. Using the cluster sampling method, 386 students from 12 primary schools in a county were selected as research subjects. Questionnaire surveys were conducted using the *County-Level Primary School Sunshine Sports Policy Implementation Scale* and the *Positive Affect Scale*. Data were processed through descriptive statistics, Pearson correlation analysis, and multiple linear regression analysis. The results showed that: ① The overall implementation quality of the Sunshine Sports Policy in county-level primary schools was at a medium to high level, with the policy cognition dimension scoring the highest (3.81 ± 0.68) and the supervision and evaluation dimension scoring the lowest (3.26 ± 0.85); ② All dimensions of policy implementation were significantly positively correlated with students' positive emotions ($p < 0.001$), with the activity implementation dimension showing the strongest correlation ($r = 0.521$); ③ Multiple regression analysis indicated that all dimensions of policy implementation could collectively explain 48.1% of the variance in students' positive emotions, with the activity implementation dimension having the most significant predictive effect on positive emotions ($\beta = 0.375$). The conclusion shows that effective implementation of the Sunshine Sports Policy can significantly enhance the level of positive emotions among primary school students in county areas. Enriching campus sports activities is the core path to cultivating students' positive psychology, and subsequent policy optimization should focus on the effectiveness of sports activity implementation and grassroots sports resource guarantee.

KEYWORDS

Sunshine Sports; Policy implementation; Positive emotions; County-level primary schools; Mental health.

1. INTRODUCTION

Since the issuance of the *Notice on Launching the National Hundreds of Millions of Students Sunshine Sports Campaign* in 2007, the Sunshine Sports Policy has become a core policy tool for promoting the reform of school physical education and facilitating the physical and mental health development of students in China [1]. After more than a decade of normalized promotion, the policy has achieved remarkable results in improving students' physical health. However, in grassroots education scenarios such as county areas, there is a common one-sided problem of "emphasizing physical fitness

improvement while neglecting psychological cultivation" in policy implementation. Existing studies mostly focus on the effect of students' physical fitness improvement, and rarely systematically explore the empowering effect of sports activities on students' positive emotions and mental health, leading to certain limitations in research perspectives [2-3].

County-level primary schools are an important cornerstone of China's basic education system, undertaking the educational tasks of more than 60% of rural primary school students nationwide. However, limited by regional resource endowments, teacher allocation and development levels, there is a significant gap in the implementation quality and effectiveness of the Sunshine Sports Policy between county-level primary schools and urban schools [4]. Meanwhile, primary school students in county areas, especially left-behind children, face high mental health risks due to lack of growth companionship and insufficient psychological counseling. The cultivation of positive emotions has become a key and difficult point in grassroots mental health education. In this context, systematically exploring the correlation between the implementation level of the Sunshine Sports Policy and students' positive emotions can not only verify the educational value of "sports for mental nurturance", but also provide empirical support and operable practical references for grassroots primary schools to optimize policy implementation paths and accurately promote students' mental health development[5].

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. Research Progress on the Implementation of the Sunshine Sports Policy

Current academic research on the implementation of the Sunshine Sports Policy mainly focuses on the investigation of implementation status, analysis of urban-rural differences, and identification of influencing factors. A field survey by Yu et al. [4] in County A, Yunnan Province found that county-level schools lag significantly behind urban schools in terms of funding guarantee, venue and facility construction, and activity supporting support for Sunshine Sports, and the obstruction problem of the "last mile" in policy implementation is particularly prominent. Zheng et al. [6] constructed an integrated school-family-community policy implementation model, clarifying that school sports supervision, family demonstration guidance, and community organizational guarantee are the core elements for the long-term implementation of the policy. From the perspective of students' participation initiative, Zhang et al. [2] found that students' sports psychological experience is a key factor affecting their exercise persistence, which also suggests that policy implementation should not only focus on hardware resource investment, but also pay attention to students' subjective psychological experience and emotional gain.

2.2. Research on the Correlation between Sports Activities and Positive Emotions

Positive emotions are a core indicator of individual mental health, which can effectively expand cognitive horizons, enrich psychological resources, and improve individual social adaptability [7]. A large number of empirical studies at home and abroad have confirmed that regular sports activities are an effective way to cultivate positive emotions and improve psychological states. In foreign studies, the Fit-4-Fun special sports intervention study conducted by Eather et al. [8] showed that targeted campus sports activities can significantly improve the physical and mental vitality and pleasure of primary school students; qualitative research by Beam et al. [9] found that the sense of achievement brought by peer collaboration, competitive challenges and self-breakthrough in sports activities is an important carrier for stimulating students' positive emotions. In domestic research, Li [1] confirmed that Sunshine Sports intervention can effectively improve the negative psychological state and cultivate positive psychological qualities of rural left-behind children; Wei et al. [10] showed that a good campus sports environment can positively predict students' exercise attitudes and emotional experiences, providing strong support for the cultivation of students' positive emotions.

2.3. Research Hypotheses

Based on the existing research results, this study believes that high-quality implementation of the Sunshine Sports Policy can effectively stimulate students' enthusiasm for sports participation by improving the allocation of sports resources and creating a normalized campus sports atmosphere, thereby continuously cultivating and enhancing students' positive emotions. Accordingly, this study proposes two research hypotheses:

H1: All dimensions of the implementation of the Sunshine Sports Policy are significantly positively correlated with the positive emotions of primary school students

H2: All dimensions of the implementation of the Sunshine Sports Policy have a significant positive predictive effect on the positive emotions of primary school students, with the activity implementation dimension having the optimal predictive power

3. RESEARCH SUBJECTS AND METHODS

3.1. Research Subjects

Using the cluster sampling method, students from grades 4 to 6 in 12 rural primary schools in a county in North China were selected as research subjects. A total of 412 questionnaires were distributed, and 386 valid questionnaires were recovered, with an effective recovery rate of 93.7%. The sample structure is as follows: 201 boys and 185 girls; 128 fourth-grade students, 132 fifth-grade students, and 126 sixth-grade students; 112 left-behind children and 274 non-left-behind children. The sample covers students of different grades and types, with a balanced structure and good representativeness.

3.2. Research Instruments

3.2.1. Sunshine Sports Policy Implementation Scale

Based on the reference to mature academic scales and relevant research results [4,6], this study self-compiled the *County-Level Primary School Sunshine Sports Policy Implementation Scale*, which includes four core dimensions: ① Policy cognition: the degree of awareness and understanding of teachers and students on the content and educational requirements of the Sunshine Sports Policy; ② Resource input: the hardware and human supporting conditions such as school sports venues, equipment, full-time teachers, and funding guarantees; ③ Activity implementation: the organization frequency, form richness, and full participation rate of school Sunshine Sports activities; ④ Supervision and evaluation: the supervision, assessment and feedback rectification mechanism of schools for physical education teaching, after-school sports, and competitive events. The scale uses a 5-point Likert scale, with 1 point representing "completely inconsistent" and 5 points representing "completely consistent". The higher the score, the better the implementation quality of the school's Sunshine Sports Policy. In this study, the overall Cronbach's α coefficient of the scale was 0.872, and the α coefficients of each dimension ranged from 0.76 to 0.83, indicating good overall reliability and stable and reliable measurement results.

3.2.2. Positive Affect Scale

The positive affect subscale from the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988) was used, which includes 9 typical positive emotion indicators such as enthusiasm, vitality, pleasure, and pride. It uses a 5-point Likert scale, with higher scores indicating higher levels of positive emotions and more positive psychological states of students. In this study, the Cronbach's α coefficient of the scale was 0.845, indicating good reliability and suitability for subsequent data analysis.

3.3. Data Processing

This study used Python 3.9 and SPSS 26.0 statistical software to process the survey data, and sequentially carried out descriptive statistics, Pearson correlation analysis and multiple linear regression analysis. The significance level of all statistical tests in this study was uniformly set at $\alpha = 0.05$.

4. RESEARCH RESULTS

4.1. Descriptive Statistics of Variables

Descriptive statistical analysis was conducted on each dimension of the implementation of the Sunshine Sports Policy and students' positive emotions, and the results are shown in Table 1. Overall, the scores of all dimensions of the Sunshine Sports Policy implementation in county-level primary schools were at a medium to high level. Among them, the policy cognition dimension scored the highest, indicating that teachers and students in grassroots schools have a high awareness of the Sunshine Sports Policy and good policy popularization effects; the supervision and evaluation dimension scored the lowest, reflecting that county-level primary schools have obvious shortcomings in the process supervision, effect assessment, and closed-loop feedback links of policy implementation. The average score of positive emotions of the surveyed students was 3.24 ± 0.54 , which was at a medium development level overall, and there is still much room for improvement in the cultivation of positive emotions.

Table 1. Descriptive Statistics of Variables (n = 386)

Variable	Mean	Standard Deviation	Minimum	Maximum
Policy Cognition	3.81	0.68	1.36	5.00
Resource Input	3.41	0.81	1.27	5.00
Activity Implementation	3.78	0.73	1.39	5.00
Supervision and Evaluation	3.26	0.85	1.00	5.00
Positive Emotions	3.24	0.54	1.86	4.91

4.2. Correlation Analysis between Policy Implementation and Positive Emotions

Pearson correlation analysis was used to systematically explore the correlation characteristics between each dimension of the implementation of the Sunshine Sports Policy and students' positive emotions, and the specific results are shown in Table 2 and Figure 1. Data analysis showed that all four dimensions of policy implementation were extremely significantly positively correlated with students' positive emotions ($p < 0.001$). Among them, the activity implementation dimension had the highest correlation coefficient with positive emotions ($r = 0.521$), indicating the closest correlation; followed by the supervision and evaluation dimension ($r = 0.331$) and the resource input dimension ($r = 0.306$); the policy cognition dimension had the lowest correlation coefficient ($r = 0.193$). This research result effectively verifies hypothesis H1, that is, the better the implementation quality of the Sunshine Sports Policy, the higher the development level of positive emotions of primary school students.

Table 2. Correlation Analysis Between Various Dimensions of Policy Implementation and Positive Emotions

Dimension	Correlation Coefficient r	p -value	Significance
Policy Cognition	0.193	0.000	$p < 0.001$
Resource Input	0.306	0.000	$p < 0.001$
Activity Implementation	0.521	0.000	$p < 0.001$
Supervision and Evaluation	0.331	0.000	$p < 0.001$

Note: *** indicates $p < 0.001$, with extremely significant statistical significance.

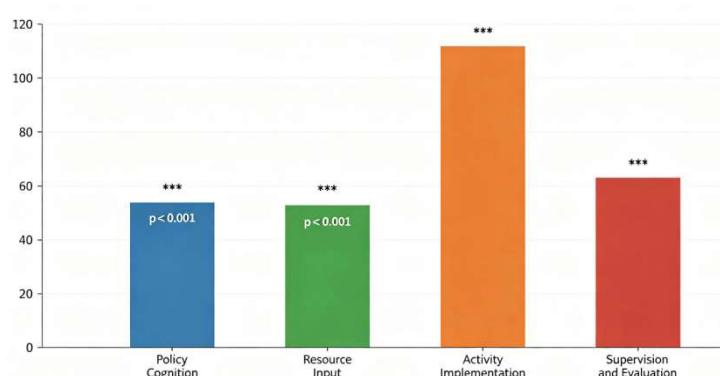


Figure 1. Correlation Between Various Dimensions of Sunshine Sports Policy Implementation and Students' Positive Emotions (*** represents $p < 0.001$)

4.3. Regression Analysis of Policy Implementation on Positive Emotions

To further clarify the influence degree and predictive power of each dimension of policy implementation on students' positive emotions, this study constructed a multiple linear regression model with the four dimensions of Sunshine Sports Policy implementation as independent variables and the positive emotions of primary school students as dependent variables for analysis. The specific results are shown in Table 3 and Figure 2.

Table 3. Multiple Regression Analysis Results of Policy Implementation on Positive Emotions

Variable	Regression Coefficient β	Standard Error	t -value	p -value
Constant	0.049	0.132	0.371	0.711
Policy Cognition	0.120	0.034	3.529	0.000
Resource Input	0.192	0.031	6.194	0.000
Activity Implementation	0.375	0.035	10.714	0.000
Supervision and Evaluation	0.202	0.029	6.966	0.000
Adjusted R^2	0.481	-	-	-
F -value	91.245	-	-	0.000

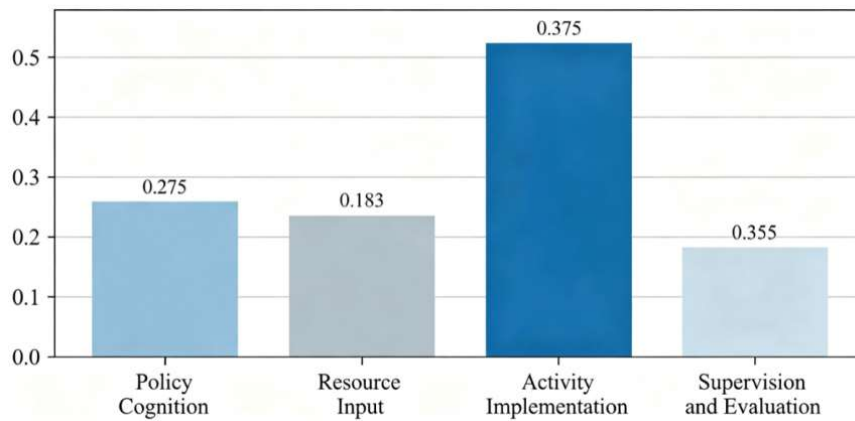


Figure 2. Standardized Regression Coefficients of Sunshine Sports Policy Implementation on Students' Positive Emotions

The regression results showed that the adjusted coefficient of determination R^2 of the model was 0.481, indicating that all dimensions of the implementation of the Sunshine Sports Policy could collectively explain 48.1% of the variance in students' positive emotions, with a good model fit and strong explanatory power. All four independent variables had a significant positive predictive effect on students' positive emotions ($p < 0.001$). Among them, the activity implementation dimension had the largest standardized regression coefficient ($\beta = 0.375$), with the optimal predictive power; followed by the supervision and evaluation dimension ($\beta = 0.202$) and the resource input dimension ($\beta = 0.192$); the policy cognition dimension had the weakest predictive effect ($\beta = 0.120$). This result verifies research hypothesis H2, confirming that the implementation of sports activities is the core variable for predicting and cultivating the positive emotions of primary school students.

To intuitively present the linear correlation characteristics between the level of sports activity implementation and students' positive emotions, this study drew a scatter plot with a fitting line (Figure 3). The results showed that with the improvement of the quality, frequency and richness of campus sports activities, the scores of students' positive emotions showed a significant increasing trend, further confirming the positive promoting effect of sports activity implementation on the positive emotions of primary school students.

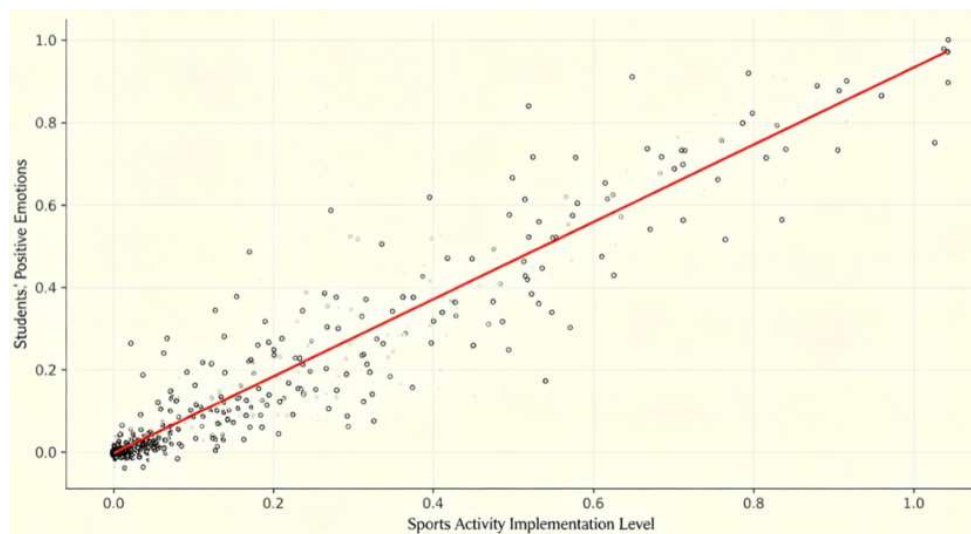


Figure 3. Scatter Plot with Fitting Line of Sports Activity Implementation Level and Students' Positive Emotions (The red line is the fitting trend line)

5. DISCUSSION

5.1. Current Characteristics of the Implementation of the Sunshine Sports Policy in County-Level Primary Schools

The results of this study show that the overall implementation quality of the Sunshine Sports Policy in county-level primary schools is at a medium to high level, but the development of each dimension is unbalanced and significantly different, with the policy cognition dimension scoring the best and the supervision and evaluation dimension scoring the lowest. This conclusion is consistent with the research findings of Yu et al. [4] on county-level primary schools in Yunnan Province, indicating that after long-term policy publicity and implementation promotion, grassroots schools, teachers and students in county areas have formed a general understanding of the core content and basic requirements of the Sunshine Sports Policy, but the normalized supervision, process control, effect evaluation and rectification closed-loop mechanism for policy implementation have not yet been improved. Most county-level schools have the problems of "emphasizing publicity over implementation" and "emphasizing form over effectiveness", leading to some sports policies becoming formalistic. This is the core problem that needs to be focused on solving in subsequent policy optimization and implementation quality improvement.

5.2. Correlation Mechanism between Policy Implementation and Positive Emotions

This study confirms that all dimensions of the implementation of the Sunshine Sports Policy are extremely significantly positively correlated with the positive emotions of primary school students, which echoes the research conclusion of Li [1], fully indicating that the Sunshine Sports Policy not only has the basic function of enhancing students' physical fitness, but also contains the educational value of cultivating students' positive psychology and nourishing mental health. Among them, the empowering effect of the sports activity implementation dimension is the most prominent. The core reason is that activity implementation is the core link where students directly participate and have immersive experiences. Rich, diverse and normalized campus sports activities allow students to release academic pressure, temper willpower, gain success experience, and enhance peer interaction during exercise, which can generate positive emotional experiences such as pleasure, self-confidence, and sense of belonging in multiple dimensions [9]. In comparison, the policy cognition dimension has a weaker influence, indicating that simple theoretical knowledge of policies cannot directly affect students' psychological states. Only by translating policy provisions into participatory, experiential and normalized sports activities can the educational goal of "sports for mental nurturance" be truly realized.

In addition, resource input and supervision and evaluation also have a significant positive predictive effect on students' positive emotions. Resource input is the basic guarantee for the high-quality development of sports activities. Perfect venues and equipment, sufficient funding support, and professional physical education teachers can effectively ensure the safety, interest and professionalism of sports activities, allowing students to fully enjoy the fun of sports and accumulate positive sports experiences [10]. The normalized supervision and evaluation mechanism can effectively avoid problems such as the squeezing of physical education class hours and the formalization of sports activities, guarantee students' daily sports activity time, and realize the normalization and long-term effect of sports mental nurturing.

5.3. Practical Implications of the Study

The conclusions of this study provide a clear practical path for the quality improvement and optimization of the Sunshine Sports Policy and the deepening of integrated physical and mental education in county-level primary schools. First, take the implementation of sports activities as the core starting point, enrich activity carriers and forms, and rely on diverse forms such as characteristic

large breaks, sports clubs, fun events, and class leagues to adapt to the sports needs of students of different grades and interest characteristics, and improve the full participation rate. Second, make up for the shortcomings of grassroots sports resources, increase investment in sports venues, equipment and funds for county-level primary schools, strengthen the professional training of physical education teachers and the construction of the teaching team, and lay a solid hardware and human support for the normalized development of Sunshine Sports activities. Third, improve the normalized supervision and evaluation mechanism, construct a whole-process and closed-loop policy assessment system, incorporate soft educational indicators such as students' positive emotions and mental health levels into the assessment dimension, and eliminate formalistic implementation. Fourth, change the traditional educational concept, abandon the one-sided cognition of "emphasizing physical fitness over psychology", focus on the integration of physical education and education, and the co-cultivation of physical and mental health, nourish students' positive psychological qualities with normalized sports activities, and fully release the mental nurturing value of sports.

6. CONCLUSION AND SUGGESTIONS

6.1. Research Conclusion

Taking county-level primary schools as the research sample, this study conducted an empirical analysis on the correlation between the implementation of the Sunshine Sports Policy and students' positive emotions, and finally drew three core conclusions:

- (1) The overall implementation quality of the Sunshine Sports Policy in county-level primary schools is at a medium to high level, with significant differences in the development of each dimension. Policy cognition scores the highest, while supervision and evaluation scores the lowest;
- (2) All dimensions of the implementation of the Sunshine Sports Policy are significantly positively correlated with students' positive emotions, with the activity implementation dimension showing the strongest correlation;
- (3) All dimensions of the implementation of the Sunshine Sports Policy have a significant positive predictive effect on students' positive emotions, which can collectively explain 48.1% of the variance, among which activity implementation is the core predictive variable.

6.2. Policy Suggestions

(1) Focus on Activity Implementation and Enrich the Supply of Sports Activities: County-level primary and secondary schools should build a normalized and diversified sports activity system based on students' interest characteristics and regional characteristics, strictly implement the national policy requirement of "one hour of campus sports activities for students every day", and allow students to gain a sense of achievement, belonging and pleasure in immersive sports experiences, and continuously cultivate positive emotions.

(2) Strengthen Resource Guarantee and Make Up for the Shortcomings of Grassroots Education: Education authorities and schools need to increase the tilt of sports resources to county-level primary schools, improve hardware facilities such as sports venues and equipment, improve the training, rotation and teaching research mechanisms for physical education teachers, solve the pain points of weak grassroots physical education teachers and insufficient resources, and lay a foundation for the implementation of sports mental nurturing work.

(3) Improve the Supervision Mechanism and Consolidate the Effectiveness of Policy Implementation: Establish a whole-process normalized supervision, assessment and feedback closed-loop mechanism for the implementation of the Sunshine Sports Policy, incorporate educational effectiveness such as students' mental health and positive emotion development into the

evaluation system, eliminate formalistic and superficial policy implementation, ensure the orderly development of physical education teaching and after-school activities, and realize the long-term educational effect of the policy.

(4) Deepen the Integration of Physical and Mental Education and Reshape the Concept of Sports Education: Guide grassroots educators to change the traditional cognition of "emphasizing physical fitness over psychology", establish the educational concept of "sports for mental nurturance and integrated physical and mental cultivation", and integrate the cultivation of positive emotions and the shaping of psychological qualities into the design and implementation of physical education teaching and activities in an all-round way, so as to truly achieve the educational goal of all-round development through the five educations.

REFERENCES

- [1] Li, S. (2021). Research on sports intervention for rural left-behind children under the background of sunshine sports. In *Proceedings of the 2021 Education Innovation Network Symposium (III)* (pp. 123–126).
- [2] Zhang, S., & Luo, B. (2019). A study on primary school students' physical exercise and its influencing factors from the perspective of initiative. *Journal of Shandong Sport University*, 35(2), 108–112.
- [3] Mi, Q. (2021). Discussion on primary school physical education reform strategy under the background of sunshine sports. *Full-Text Database of Chinese Science and Technology Journals (Full Text Edition) Educational Science*, (5), 211–212.
- [4] Yu, X., & Song, S. (2022). Problems and countermeasures for the integrated implementation of urban and rural sunshine sports: A case study of County A in Yunnan Province. *Sport Science and Technology*, 43(6), 78–80.
- [5] Wang, Y. (2008). Discussion on the return of life to physical education teaching (Doctoral dissertation). Northeast Normal University, Changchun.
- [6] Zheng, B., Luo, J., Zhang, C., et al. (2015). Model construction of a long-term mechanism for promoting adolescent sunshine sports activities through the integration of school, family and community. *Journal of Physical Education*, 22(2), 96–102.
- [7] Mitic, P., Stojanovic, N., Savic, Z., et al. (2023). Adolescent sports motivation: Influencing factors of attitudes and motivation towards school sports participation. *Theoretical Education and Social Sciences*, 47(3), 507–526.
- [8] Eather, N. (2018). Adolescent health sports program: A study on physical activity and physical fitness improvement of primary school students (Doctoral dissertation). University of Newcastle, Newcastle.
- [9] Beam, J. (2017). A multiple-case qualitative study on primary school students' motivation for physical education classes and after-school sports participation (Doctoral dissertation). Vrije Universiteit, Amsterdam.
- [10] Wei, N., Wang, B., & Shi, S. (2019). Investigation and reflection on sports environment education from the perspective of students. *Hubei Sports Science*, 38(9), 768–771.