

Integrating English Learning into Fun Physical Education: Effects on Primary School Students' Bilingual Proficiency, Learning Initiative, and Holistic Development within an Interdisciplinary Framework

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Abstract: *Grounded in the contemporary educational paradigm of interdisciplinary integration, this study investigates the incorporation of English subject learning into fun-oriented physical education (PE) instruction at the primary school level, with the aim of examining its multifaceted effects on students' English knowledge acquisition, bilingual communicative competence, learning initiative, and overall developmental outcomes. Employing a mixed-method approach that combines classroom teaching practice, structured questionnaires, and quantitative data analysis, the research systematically explores the synergistic potential between PE and English language education, as well as the specific facilitating role that engaging, activity-based PE teaching plays in enhancing English learning effectiveness among young learners. Preliminary findings suggest that such integration not only reinforces language skills through contextualized, kinesthetic activities but also significantly boosts students' motivation and participatory engagement, thereby contributing to more balanced cognitive and affective growth. In light of these results, the study underscores the professional responsibility of young PE educators in the new era to actively champion the spirit of pedagogical dedication, maintain a dynamic balance between tradition and innovation, and persistently engage in reflective exploration and experimental practice. Ultimately, this work advocates for the continued pursuit of novel approaches to sports education that advance the broader agenda of interdisciplinary collaboration, offering both theoretical insights and practical pathways for fostering holistic, future-ready learners in primary education.*

Keywords: Interdisciplinary integration; Fun physical education; English subject learning; Primary school students; Bilingual communication; Learning initiative; Holistic development; Pedagogical innovation.

1. Introduction

As a physical education major, I have always been concerned about the development of education. To consolidate my professional knowledge and strive to combine theory with practice, in line with the spirit of the Ministry of Education's notice on "Several Measures to Strengthen the Construction of Physical Education Teacher Teams in Primary and Secondary Schools in the New Era," I used my winter vacation time to conduct extracurricular teaching practice at "Lexus Space Education and Cultural Industry Development Co., Ltd." in Xingping City, Shaanxi Province. This educational institution mainly serves upper elementary and junior high school students. My main responsibilities were: assistant teacher for English classes for fourth to sixth grade students in the elementary department and coach for the Lezhi Physical Fitness Camp in the elementary department. In physical education teaching, I applied bilingual teaching, attempting to integrate physical education, fitness training, and English learning using an interdisciplinary approach, combining the Lezhi Physical Fitness Camp I was responsible for with English learning. Considering the lively and active nature of elementary school students, I enabled them to engage in what would otherwise be a dull English learning process within a relaxed, enjoyable, and physically engaging sports game atmosphere. By using bilingual teaching that combines Chinese and English, increasing interactive communication, I provided students with more foreign language learning environments on one hand, while conducting physical training on the other, creating a joyful and relaxed learning

atmosphere.

Through three weeks of extracurricular practice work at "Lexus Space Education and Cultural Industry Development Co., Ltd.", I aimed to actively participate in the teaching process, attempting to use methods that integrate physical education and English disciplines to explore how fun physical education can promote English learning among primary school students.

2. Literature Review

General Secretary Xi Jinping emphasized at the National Education Conference to adhere to the path of developing socialism with Chinese characteristics in education and cultivate socialist builders and successors who develop comprehensively in morality, intelligence, physique, aesthetics, and labor. "Poetry is a trend in the continuous reform and development of today's education, where various disciplines integrate and support each other. Discipline integration refers to interdisciplinary and multidisciplinary professional crossover and integration, with each discipline effectively teaching through new combinations. Interdisciplinary means crossing disciplinary boundaries, promoting the penetration, intersection, and fusion of disciplines, thereby forming new disciplines and theories.

In fact, from ancient times to the present, educators and educational pioneers have been exploring the integration of knowledge across different specialties and fields. In ancient

times, the classification of knowledge was not as refined as it is today, and many scholars made contributions in multiple areas. Confucius, the progenitor of education in China, taught his disciples astronomy and geography alongside Confucian philosophy, history and humanities along with mathematical examples and agricultural practices. The ancient Chinese scholar Mozi from the Spring and Autumn period wrote the "Mo Jing," which encompasses knowledge in mechanics, optics, geometry, and more, demonstrating the comprehensive application of interdisciplinary knowledge in ancient China. Abroad, the Greek philosopher Aristotle conducted in-depth research in philosophy, physics, biology, logic, and other disciplines; his books and teachings contained a wide array of interdisciplinary knowledge. These activities by ancient scholars were not only cultural dissemination but also reflected the natural integration of various disciplines early on. This situation has resulted in educational theory having a comprehensive, interdisciplinary nature, rich and diverse in essence [2]. Thus, it can be seen that the integration of disciplines is inevitable—unity in diversity—all disciplines possess both independence and an inherent unity and fusion, supporting each other.

In modern society, education abroad also takes place in the form of interdisciplinary integration. In Canada, children's language classes involve learning more than three languages, while physics and chemistry are combined into a single course. At Kazakhstan's Confucius Institutes, mathematics and music classes are taught in Chinese. In Japan, physical education is integrated with national defense education. All high-end technological achievements result from the fusion and collaborative efforts of various specialties and fields.

At this stage in our country, research on interdisciplinary integration is quite common, involving various industries and fields. Disciplinary integration refers to an activity that breaks down disciplinary boundaries and promotes the intersection and consolidation of knowledge, playing a significant role in solving complex problems, driving innovation, and cultivating versatile talents. In the future of education and scientific research, disciplinary integration will become an indispensable trend. This article, under this premise, utilizes social practice opportunities to explore and make initial attempts at interdisciplinary integration, aiming to apply learned professional knowledge through investigation and personal practice to study interdisciplinary integration.

3. Research Subjects

The subjects of this study are students in grades four to six of the primary school department at Lexue Space Education & Culture Industry Development Co., Ltd., who are simultaneously enrolled in both the "English Course" and the "Joyful Intelligence Physical Training Camp Course."

The students of the primary school department of the educational center selected as the research subjects all come from several key primary schools in the urban area of Xingping City, Xianyang City: Qinling Primary School, Experimental Primary School, Huaxing Primary School, and Shanchai Primary School. Their family backgrounds are mainly composed of families working in state-owned enterprises, public institutions, civil servant families, and

urban resident families; all subjects are in grades four to six of primary school. After communicating with the research subjects, both students and parents showed a proactive attitude towards accepting and cooperating with this questionnaire survey. Therefore, the research subjects are representative, feasible, and authentic, and the results of the questionnaire survey can reflect the actual situation more truthfully.

Basic academic situation analysis of the survey subjects:

1) Physical and mental: Students in grades four to six belong to the higher grades of primary school, naturally lively and active. They already possess basic motor skills and the ability to learn fundamental physical education. However, the physical and mental development of students at this stage is still immature. During class, it is necessary to constantly monitor students' behavior and emotions, guide any immature or misunderstood behaviors, and promptly address any negative emotions.

2) Language: Upper-grade primary school students have already acquired a certain foundation in daily English oral learning. According to the questionnaire survey, their understanding of English mostly remains within the 45 minutes of English class during school hours. For example: lessons learned from textbooks, words and phrases in the textbook, and simple sentences frequently used by teachers during lectures (Class begin, Class over...). They lack a language communication environment and show insufficient interest in English learning.

3) Physical fitness: Primary school students are lively and active. Due to daily bad habits and addiction to electronic products, they lack systematic physical training. A significant number of students exhibit poor basic physical fitness, obesity, myopia, laziness, poor coordination, and social withdrawal.

4. Application of Research Methods

This article conducts hands-on teaching practice and uses questionnaires to collect real data from the study group, then analyzes and studies the data.

First, a survey questionnaire was designed for fourth to sixth grade students of the educational center to conduct the survey and collect data. A total of 200 questionnaires were distributed, 189 were returned, of which 120 were valid.

Secondly, a survey questionnaire was designed for the parents of fourth to sixth grade students of the educational center to conduct the survey and collect data. A total of 200 questionnaires were distributed, 175 were returned, of which 100 were valid.

The collected questionnaires were organized, and the data were tabulated and summarized. Then, a mathematical linear regression model was applied to quantitatively analyze the collected data; finally, the results of the quantitative analysis were summarized and compared to draw the final conclusion of this social practice investigation.

This article conducts social practice research work through

questionnaire surveys for data collection, organizes the collected questionnaires, aggregates the obtained data, and establishes data tables. The data in the tables is compared to derive preliminary analysis results. For the data obtained from the research, a mathematical linear regression model is used to perform scientific and effective data analysis calculations. The Pearson correlation coefficient is used to measure the strength and direction of the linear relationship between two variables (students' interest scores in English and their English performance). Value range and significance: The Pearson correlation coefficient ranges from -1 to 1. A value of 1 indicates a perfectly positive correlation, -1 indicates a perfectly negative correlation, and 0 indicates no linear relationship. The closer the absolute value is to 1, the stronger the linear relationship between the two variables.

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}$$

(r is the Pearson correlation coefficient; the closer r is to 1 or -1, the stronger the linear relationship; the closer to 0, the weaker the linear relationship) Supplement: $|r| \geq 0.8$: highly correlated; $0.5 \leq |r| < 0.8$: moderately correlated; $0.3 \leq |r| < 0.5$: low to moderate correlation; $|r| < 0.3$: low correlation. $r > 0$: positively correlated; $r < 0$: negatively correlated.

Finally, the results obtained from calculating the Pearson correlation coefficient using mathematical methods are compared with the preliminary analysis results to draw the final research conclusions.

5. Teaching Practice of Integrating Recreational Sports with Elementary School English

Through the learning and observation of interdisciplinary integration, it is found that with the continuous reform and development of education, the connection between physical education teaching and primary school English teaching has attracted more and more attention. More and more teachers have realized that physical education teaching is not only an important means to enhance students' physical fitness, but also an important way to cultivate students' interest in English learning and language application ability, improve the teaching atmosphere, and break through the pain points of teaching. Hong Dayong also reminds us that at the same time, we should also see that the development quality of interdisciplinary intersection and interdisciplinary disciplines is still not high enough and unbalanced. For example, there are fewer real intersections and more false intersections; fewer "chemical reactions" and more simple physical superpositions; fewer strong - functioning cases and more mediocre effects. There are still some prominent problems with a certain degree of universality. First, the understanding of the integrated development of interdisciplinary intersection is not accurate and in - depth enough. Generally speaking, interdisciplinary intersection is simply equated with the construction of interdisciplinary disciplines. Second, more considerations are given from the perspective of scientific research and less from the perspective of cultivating talents. The effect of exploring and innovating the cross - disciplinary talent training model is not obvious enough. Third, the connection with the major strategic needs of the country is not

accurate enough, the service and support are not strong enough, the layout and organization are not systematic enough, and there are phenomena of being small - scale, scattered and in - substantial. Fourth, the scientific and standardized establishment and construction of interdisciplinary disciplines still need to be strengthened. Objectively, there is a certain tendency of random establishment, following the trend of hype, ineffective construction and even improper profit - seeking. Fifth, the institutional obstacles restricting the interdisciplinary and integrated development still need to be further removed. Some of them are internal obstacles in degree - awarding institutions, such as those in the aspects of teaching staff, organizational design, resource allocation and performance management. Some are due to the ineffective implementation of external policies and the insufficient reform and innovation, such as the evaluation methods.

This winter vacation was my first holiday after entering university, and I responded to the school's call to engage in social practice, applying some of the knowledge I have learned into practice. Combining my major and my interest in English, I planned to attempt integrating the English major with sports. Through fun physical activities, I aimed to spark students' passion for English while enjoying the pleasures brought by sports. English belongs to language subjects, and learning it within a context yields excellent results, whereas physical education mainly focuses on activities, games, and exercises, generating multidimensional contexts in class; therefore, the two can be effectively connected. The process of learning sports is a reproduction and consolidation of English teaching scenarios for students, and incorporating an English context into physical education classes can enhance the fun of these classes.

Since I had previously studied at Lexue Space Education Culture Industry Development Co., Ltd. and we knew each other well, I gained the trust of the institution and obtained a valuable social practice opportunity to participate in English teaching and physical training for students in grades 4 to 6. To better understand the basic situation of students at the elementary level, after communicating with students and parents, and with the support of my supervisor, I distributed survey questionnaires to elementary students and their parents. The purpose was to investigate the English learning situation and physical fitness of students in grades 4 to 6. One purpose of the survey was to prepare for teaching work, and the other was to facilitate comparisons of the effectiveness of new teaching methods.

After organizing the questionnaires, it was found that young students faced issues in English learning such as: lack of language environment, inability to memorize, boredom, lack of application scenarios, lack of interest, parents' inability to provide tutoring, and restlessness. After completing the research, I communicated with my supervisor and experienced veteran teachers, proposing a bilingual physical education teaching method based on the concept of interdisciplinary integration. With the recognition and support of my supervisor, and after consulting various predecessors and reviewing relevant materials, I prepared for teaching. I officially began attempting fun physical education teaching primarily conducted in English.

According to the overall teaching plan of the education center, I, along with a teacher who has rich teaching experience, will jointly conduct the teaching. Two 50-minute classes are scheduled each day, and all participants are students from grades 4 to 6. During the teaching process, considering the age characteristics of elementary students, their physical development, combined with key elementary English phrases and sentence patterns, as well as the level of sports ability, I have formulated the following methods:

5.1 Integration of Physical Education with Elementary English Teaching-pre-class Lineup

5.1.1 Lineup:

I help students quickly switch from the relaxed state during break time to a focused state for class through lining up, concentrating their attention on the upcoming physical education class. Jiang Lexuan once proposed: "The teacher, as the sender, is the subject and authority; the student is the receiver, the object, and the subordinate." Therefore, we can guide students to adjust their state to the classroom state through lining up.

5.1.1.1 Method:

Use simple English commands for lining up. My students and I agreed on some fixed commands for lining up, as shown in the table below:

Command	Chinese explanation	Command content	Student response
Assemble		Stand at attention	Roger that
Quickly		Quickly	Right away
Attention		Stand at attention	Roger that
At ease		At ease	Roger that
Eyes on the center		Eyes center	Look at center

5.1.1.2 Effects:

- 1) Through interesting line-up activities, students can gradually focus their attention on the classroom, preparing mentally for subsequent learning and practice;
- 2) In the long term, the fun English line-up before each class will help students form "muscle memory" as a necessary pre-PE class ritual;
- 3) This is a unique slogan agreed upon between teachers and students, which can enhance teacher-student rapport.
- 4) Simple English slogan line-ups create a specific English-speaking environment, providing subtle oral practice.

5.1.2 Count off:

Divided into two parts - "Counting off" and "Student Reports." Since upper elementary students have already mastered the pronunciation of English numbers, English counting can be used to help reinforce their grasp. "Student Reports" involve students reporting attendance in English, with this segment rotating among students.

5.1.2.1 Method:

When the teacher gives the command to "Count off," students begin counting in English: "one, two, three...". After counting, the designated student runs to the front of the line and reports the attendance to the teacher: if no one is absent, they say "All are present"; if there are absentees, they say "xxx (absentee's name) is absent / xxx, xxx (absentees' names) are absent".

5.1.2.2 Effects:

- 1) Strengthen understanding among students, allowing them to find a sense of belonging and collective identity;
- 2) Provide every student with the opportunity to speak in front of the entire class, cultivating psychological resilience and courage;
- 3) Li Wenxue once stated that this rotation system for class leaders allows every student to gain exercise and improvement, returning class management rights to the students, stimulating self-education and self-management [5].

5.1.3 Integration of Physical Education with Elementary English Teaching Core Content

Fun Drill and Formation Practice

5.1.3.1 Content

To better study fun drills and formations later, I first lead students in reviewing basic drills and formations, such as: "at ease," "attention," "turn left," "march in place," etc.;

After the review, I then teach the students the pronunciation of basic English drill and formation commands, as shown in the table below:

Chinese	English
Turn left	Turn left
Turn right	Turn right
About turn	About turn
Mark time	Mark time
Side raise	Side raise
Front raise	Front raise
Xxx out of ranks	Xxx out of ranks
Xxx take your post	Xxx take your post

When observing that students have basically mastered the skill, start group practice. Each group selects a team leader to give commands. During this time, I patrol each group's practice status and correct students' pronunciation;

Assemble. The teacher gives the command and checks the results of the group practice. The group with the most errors performs a program or names 3 types of fruits (study tools, food) in English, sings an English nursery rhyme, etc.

5.1.3.2 Benefits:

- 1) Group practice can enhance students' sense of teamwork and collective honor;
- 2) Group practice can develop students' autonomy. The English class belongs to the students, as does physical exercise. However, during classroom teaching, the time and rights for learning should be given back to the students,

meaning that English learning and physical exercise should be returned to the students [6].

3) Games strengthen English listening and oral practice. While mastering formations, students learn some basic English terms for formations.

5.2 Fun Physical Training

5.2.1 Warm-up:

"APT" warm-up exercises. I used the well-known and recently popular English hit song "APT," and the children were very happy, with many students singing along while doing the exercises. This shows that this warm-up method greatly stimulated students' interest, and the rhythm of the song is strong and lively, making it easy for students to grasp, achieving the purpose of warming up;

5.2.2 Fun training

5.2.2.1 Fun basketball:

I led the students in a self-created basketball game called "WHO WILL CATCH THE BALL." At the mention of the word "game," many students' eyes lit up, and they started cheering. When I read out the rules of the game, I noticed their intense focus. At the beginning of the game, although most students showed great interest, their voices became significantly quieter when speaking English, appearing very unconfident. After several rounds, students' volume in speaking English noticeably increased, with some even starting to "shout."

This game enhanced students' ball dribbling and passing abilities, thereby exercising body coordination including hand-eye coordination, balance, strengthening upper limb muscles, core strength, improving cardiorespiratory function, and reaction speed. Meanwhile, students subconsciously learned to describe people's characteristics in English and the transformation expressions of first, second, and third person.

Game Rules:

- 1) A selects the target B while dribbling the ball and shouts to the classmates "guess who will catch the ball," describing B's features in English. e.g., girl, big eyes, tall, wearing pink shoes...
- 2) Classmates guess based on the description and ask A using the sentence pattern "Will xxx catch the ball?"
- 3) A answers based on the actual situation. If guessed correctly, answer Yes, she/he will. I will pass the ball to B. B will catch the ball. And pass the ball to B. If guessed incorrectly, answer No, she/he won't. Then continue describing until the correct guess.

5.2.2.2 Fun jump rope:

I led the students to play a self-created jump rope game "I JUMP YOU JUMP". Upon hearing the name of the game, a few students with good English skills actually mimicked the

famous scene from the movie Titanic, their exaggerated expressiveness and humorous tone made other students laugh. While affirming those students' broad knowledge and courage to perform, I took the opportunity to recommend the British movie Titanic to everyone, and the students also learned the story behind those students' performance. During the jump rope game, the students were no longer as reserved as they were during the basketball game; they began to eagerly show me the new sentence patterns I had just taught them.

This game enhanced the students' jump rope abilities, thereby promoting bone growth, strengthening ankle power, improving physical fitness, enhancing coordination and balance, increasing attention, and promoting brain development. Meanwhile, the students gradually mastered the expression of comparative sentences containing quantities in English.

Game rules:

- 1) Students form pairs, one jumps rope while the other counts, timing the jump rope for one minute.
- 2) After one minute, switch roles and continue timing the jump rope for another minute.
- 3) Students use the sentence pattern "I jumped ...more/less time than xxx" to compete in the number of jumps.

The game naturally provides students with an English learning context. English is a language subject, and learning it within a context yields better results. Physical education mainly involves activities, games, and exercises, generating multi-dimensional contexts in class, which can reproduce and consolidate English teaching scenarios and enhance the fun of physical education classes [7].

5.2.3 After class

- 1) Gather students, summarize the teaching content (sports techniques, newly learned English words and sentence patterns), and evaluate student performance;
- 2) Teach students a simple English song, requiring them to practice on their own, and check next class.

Benefits:

- 1) Systematically integrate scattered knowledge points from class, making the knowledge framework clear and strengthening memory;
- 2) Evaluating student performance, timely praising students who performed well provides positive feedback, while cultivating the self-reflection ability of students who did not perform as well;
- 3) Learning English songs helps students adapt to pronunciation and intonation, enhances listening comprehension, expands vocabulary, and imitates standard pronunciation;
- 4) Self-study and practice help improve learning initiative and

deepen students' memory.

After three weeks of continuous teaching practice in the above teaching format, in order to test the teaching effect, questionnaires were distributed to students and parents for research again.

5.3 Analysis of Questionnaire Survey Results:

5.3.1 Student questionnaire analysis

1) According to the statistics of the student questionnaire survey results, 90% of the students like the integrated teaching of physical education and English, and believe that playing sports games while learning English is more helpful for learning. 99.1% of the students like a relaxed and pleasant classroom atmosphere.

2) 85% of the students have improved their English test scores after the integration teaching of physical education and English. Before the integrated teaching, only 45% of the students chose "quite like" or "like" English, and 80% of the students chose "quite like" or "like" towards physical education.

3) After the integrated teaching, 70% of the students chose "quite like" or "like" English, which increased by 35% compared to before, and 90% of the students chose "quite like" or "like" towards physical education, which increased by 10% compared to before.

4) Before the integrated teaching, 55.8% of the students chose "can remember right after class but forget soon," and 33.5% of the students could remember most of the content but not very firmly. After the integrated teaching, 51.3% of the students could remember most of the content but not very firmly, and 42% of the students could remember most of the content and very firmly.

5) The number of students interested in English significantly increased after attending the training camp.

5.3.2 Parent questionnaire analysis

1) According to the statistics of the parent questionnaire survey results, before attending the training camp, 76% of the students had a passive learning style, and only 3% of the students had a learning style of "a little effort yields results"; before attending the training camp, 80% of the students learned English outside the school classroom through remedial classes; after attending the training camp, 79% of the students engaged in self-directed English learning and their English assessment scores improved;

2) 86% of the parents reported that after attending the training camp, their children's physical fitness, team spirit, and interest in learning English significantly improved;

3) Regarding the comparison of the importance of "physical education" and "English", 70% of the parents chose "physical education = English", and 25% of the parents chose "English > physical education"; only 3% of the parents believed that the interdisciplinary teaching model was ineffective for students.

4) Most parents reported that after the training camp, their children's learning autonomy greatly improved, and their aversion to English significantly decreased. However, some parents still raised questions such as "Why isn't interdisciplinary teaching widely adopted?" and "Will there be students who get so absorbed in sports during class that they can't focus their attention and energy on learning English?"

The data obtained from the questionnaire survey is summarized in tables, and preliminary conclusions are drawn through simple data analysis. Quantitative analysis is carried out using a linear regression model, and the Pearson correlation coefficient is calculated to draw conclusions.

Taking the most representative fifth-grade students as an example, the analysis of the questionnaire survey data shows: compared with before attending the training camp, the scores given by students for their interest in English have significantly increased after attending the training camp, and their English scores have also improved; before attending the training camp, the correlation coefficient r between "students' interest in English scores" and "English scores" was approximately 0.53, and after attending the training camp, the correlation coefficient r between "students' interest in English scores" and "English scores" was approximately 0.80.

Note:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}$$

(r is the Pearson correlation coefficient, the closer r is to 1 or -1, the stronger the linear relationship; the closer to 0, the weaker the linear relationship)

Description: $|r| \geq 0.8$: Highly correlated; $0.5 \leq |r| < 0.8$: Moderately correlated; $0.3 \leq |r| < 0.5$: Low to moderate correlation;

$|r| < 0.3$: Low correlation. $r > 0$: Positive correlation; $r < 0$: Negative correlation.

Therefore, before attending the training camp, "students' interest in English scores" and "English scores" showed a moderate positive correlation, with a significant increase in correlation.

After attending the training camp, "students' interest in English scores" and "English scores" showed a high positive correlation, with a significant increase in correlation.

Through a questionnaire survey of fifth-grade students who participated in this training camp, it was found that recreational sports increased students' interest in learning English, thereby further boosting their performance. By comparing questionnaire data and conducting mathematical quantitative analysis, the final conclusion was drawn: there is a positive correlation between interest in learning English and English scores. That is, recreational sports teaching has a significant promoting effect on English learning.

Recreational sports teaching promotes elementary school English teaching, with the following effects:

- 1) Stimulate learning interest, enhance participation, and reduce resistance;
- 2) Reduce language anxiety, boost confidence, and promote joyful learning;
- 3) Promote coordinated development of physical and mental health and cognition, enhancing subjective initiative in learning;
- 4) Create real-life contexts, break through traditional teaching limitations, achieving dual improvements in language ability and physical fitness.

Through hands-on practice, students gain strong bodies while participating in sports activities and improve their interest and ability in English learning. This not only builds an innovative education model of "five-pronged holistic education" but also vividly embodies the concept of "holistic human development" advocated by 21st-century education.

6. Conclusion

This social practice provided a practical test for my English subject knowledge and sports professional knowledge, and an initial practice for my teaching ability; the working process has benefited me greatly and left a deep impression. Every seemingly simple step requires a lot of preparation, from knowledge preparation to language output preparation, every word and action needs to be prepared. Through communication with parents and students and teaching practice, I have come to realize the heavy responsibility of being a teacher; mistakes cannot be made in class, as any mistake of mine will be infinitely magnified on the students, forming stubborn incorrect memories. In school, we are students, but here I am a teacher in the eyes of children and parents, which is a trust, a charge. When I see the innocent smiles on the children's faces when they see me, and they follow me around like little shadows, I can't help but smile; when parents hand me a cup of hot milk tea, my vision instantly blurs, all the hard work of staying up late to make plans and repeatedly rehearsing lessons disappears, and at this moment, my heart is full of longing for the education cause.

During the practical teaching process, in order to study the impact of bilingual fun physical education teaching on elementary English learning, I collected comparative data before and after adopting the new teaching method by distributing questionnaires to students and parents. After collecting and organizing the questionnaire data, I further adopted mathematical quantitative analysis methods, applied the linear regression measurement model, and calculated the Pearson correlation coefficient to draw the analysis conclusion: English learning interest and English scores are positively correlated. Therefore, it proves that fun physical education teaching has a relatively significant promoting effect on English learning.

Interdisciplinary integration breaks the boundaries of traditional classrooms, pointing to the core direction of future education: cultivating new types of talents who can flexibly apply knowledge in the real world and possess global competence. The transdisciplinary nature of knowledge

production represents the culmination of the transformation and development of knowledge production models, emphasizing both the value leadership in solving practical problems and the collaborative participation of multiple entities, while creatively proposing the clustered development of knowledge production. Optimizing towards national strategic needs [8]. In fact, there have been many research achievements regarding the practice and study of interdisciplinary integration and mutual support. However, for a freshman like me, seizing a valuable practical opportunity and boldly attempting is the most important. Due to the short duration of practice and personal deficiencies in professional knowledge, teaching experience, and scholarly background, this practical work and analysis are still quite immature, limited in scope, superficial, and narrow, with many flaws and shortcomings. The viewpoints and conclusions formed are inevitably biased, lack professionalism, and have many aspects worthy of further discussion. In the future, I must diligently study various professional knowledge, continuously reflect and summarize, keep consulting teachers, and continue to hone my skills in future studies and social practices, accumulate experience, and enhance my own abilities.

I would like to thank every teacher who has helped me during the practice, and thank each student and parent for their support and cooperation in practical teaching.

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Appendix

1. Questionnaire Content Includes Two Questionnaires: Student Questionnaire, Parent Questionnaire

Survey Questionnaire

Dear handsome guy, beautiful girl:

Hello, I am your little Yang teacher! This is a survey questionnaire, please complete it according to your actual situation. To protect your privacy, this questionnaire does not require names to be written.

- 1) What grade are you currently in as a student?
- 2) Do you like the integration of sports and English teaching? Why?
- 3) Which learning format do you find more helpful? []
A. Learning English while playing sports games B. English-only teaching C. Physical education only
- 4) Your previous English test score 【 】 Your current English test score 【 】
A. 0-40 B. 40-70 C. 70-90 D. Above 90
- 5) Your previous attitude towards English learning 【 】 Your attitude towards sports 【 】
- 6) Your previous ways of learning English 【 】 (Multiple choices)
A. Textbook B. Classroom C. Sentences repeated by the teacher in class D. Parents E. English songs, animations, and other audio-visual works
- 7) How much of the knowledge points in the English class could you remember before 【 】
A. Very little B. Could remember right after class, but forgot soon after C. Most of the content, but not very solid D. Most of the content, and very solid
- 8) Your current attitude towards English learning 【 】 Your current attitude towards sports 【 】
A. Significantly improved B. Slightly improved C. No improvement D. Don't know A. Hate B. Not interested C. Somewhat like D. Like very much
- 9) How much of the English class knowledge can you remember now 【 】 Have the assessment scores improved 【 】
- 10) Which learning method do you prefer [] and what kind of classroom atmosphere do you like more []
A. The original subject-separated teaching method B. The current integrated teaching method C. Dull D. Spoon-feeding E. Relaxed and lively
- 11) Please rate your level of interest in English 【 】 (out of 10 points)

Survey Questionnaire

Dear parents:

Hello, I am the child's English teacher and physical training camp teacher! In order to gain a deeper understanding of my teaching effectiveness and further improve my teaching methods, and to provide better teaching for children, 'Know your shortcomings and strive for progress'. I sincerely request

that you take the time out of your busy schedule to truthfully fill out this questionnaire. Your understanding and cooperation will be my inexhaustible driving force for continuous progress!

- 1) Before this training camp, what type of learner does your child belong to? []
A. Passive B. Active C. Effort with no results D. Slight effort yields results
- 2) Your child's attitude towards English before this training camp 【 】 Previous attitude towards sports and physical exercise 【 】
A. Hate B. Not interested C. Somewhat like D. Like very much
- 4) Your child's current attitude towards English learning 【 】 Current attitude towards sports and physical exercise 【 】
A. Hate B. Not interested C. Somewhat like D. Like very much
- 5) Whether your child has behaviors of studying English independently after class or whether their English assessment scores have improved 【 】
A. Often B. Occasionally C. Once or twice D. Never
- 6) Has your child's physical fitness and team spirit improved 【 】 Has your child's interest in English learning increased 【 】
The content is very solid E. Improved F. Not improved G. Scores dropped
- 7) Please select the answer that reflects your opinion on the importance of "sports" and "English" 【 】
A. English > Sports B. Sports > English C. Sports = English
- 8) Do you think our "interdisciplinary integration" teaching model is helpful to your child? []
A. Very helpful B. Somewhat helpful C. Slightly helpful D. Not helpful
- 9) As a parent, what changes have you noticed in your child through the training camp?
- 10) Do you have anything else to say 【opinions, suggestions, questions】? Please write them down below!

2. Summary of Questionnaire Survey Results

Survey Items	Specific Conditions
Preference for English-PE integrated teaching	90% of students like it, believing that combining PE games with learning English is more helpful
Preference for a relaxed and enjoyable classroom atmosphere	99.1% of students like it
Improvement in English test scores	85% of students showed improvement after integrated teaching
Attitude towards English before integrated teaching	45% of students "somewhat like" or "like" it
Attitude towards PE before integrated teaching	80% of students "somewhat like" or "like" it
Attitude towards English after integrated teaching	70% of students "somewhat like" or "like" it, increasing by 35% compared to before

Attitude towards PE after integrated teaching	90% of students "somewhat like" or "like" it, increasing by 10% compared to before
Memory retention of English class content before integrated teaching	55.8% of students "remember right after class but forget soon after"; 33.5% remember most content but not solidly
Memory retention of English class content after integrated teaching	51.3% of students remember most content but not solidly; 42% remember most content and very solidly
Survey Items	Specific Conditions
Proportion of Student Learning Types Before Attending Training Camp	Passive Type: 76%; Slight Effort Yields Results Type: 3%
Ways Students Learned English Outside School Before Attending Training Camp	80% of Students Chose Extra Classes
Student Conditions After Attending Training Camp	79% of Students Showed Self-Motivated English Learning Behavior and Improved English Assessment Scores
Parents' Feedback on Changes in Children After Attending Training Camp	86% of Parents Reported Significant Improvement in Physical Fitness, Team Spirit, and Interest in Learning English
Parents' Views on the Importance of Sports and English	Sports = English: 70%; English > Sports: 25%
Parents' Opinions on Interdisciplinary Teaching Model	3% of Parents Consider It Ineffective
Questions Raised by Parents	Why Is Interdisciplinary Teaching Not Widely Adopted: Could Students Become So Absorbed in Sports That They Fail to Focus Attention and Energy on English Learning

38	6	86
39	5	60
40	5	44
41	6	50
42	4	64
43	5	68
44	4	32
45	5	56
46	6	84
47	4	30
48	6	90
49	5	76
50	6	41
51	8	93
52	4	65
53	3	32
54	5	37
55	7	53
56	5	61
57	6	39
58	4	57
59	5	63
60	4	43
61	5	55
62	6	66
63	3	42
64	4	46
65	5	58
66	3	26
67	6	48
68	5	54
69	4	67
70	4	35
Correlation		
Coefficient	0.533722133	
Department		
Number		

3. Grade 5 Student Data Collection Form Preface: Interested in English before the course began, English proficiency before the course

Number	Rate the extent	Performance	
1	5		79
2	3		47
3	7		83
4	2		48
5	8		60
6	4		53
7	6		75
8	5		61
9	5		45
10	4		59
11	6		73
12	5		50
13	3		56
14	7		83
15	5		42
16	5		58
17	4		65
18	6		74
19	5		54
20	5		60
21	4		52
22	6		74
23	5		66
24	4		40
25	5		57
26	4		61
27	6		82
28	5		76
29	4		62
30	6		47
31	5		72
32	5		60
33	4		67
34	6		89
35	5		58
36	5		64
37	4		35

Average 4.914893617

	English after teaching	English after teaching
	Serial Number Interest Level	
		Grade
	Scoring	
1	8	88
2	9	89
3	7	80
4	8	85
5	8	86
6	9	89
7	7	82
8	8	89
9	8	84
10	9	93
11	7	73
12	8	83
13	8	88
14	9	100
15	7	80
16	8	90
17	8	83
18	9	90
19	7	76
20	8	91
21	8	84
22	9	96
23	7	76
24	8	82
25	8	84
26	9	90
27	7	75
28	8	69
29	6	79
30	8	80

31	7	75
32	9	89
33	6	68
34	10	96
35	6	74
36	7	84
37	8	60
38	8	81
39	9	96
40	7	72
41	6	68
42	8	80
43	7	86
44	6	53
45	5	60
46	9	88
47	6	55
48	8	85
49	7	80
50	6	54
51	7	87
52	7	85
53	6	64
54	8	76
55	6	59
56	9	83
57	8	82
58	7	80
59	6	83
60	5	56
61	8	80
62	7	83
63	10	96
64	8	87
65	9	88
66	7	79
67	5	55
68	8	88
69	9	92
70	8	87
Correlation coefficient 0.803917986		
Mean 7.585714286		80.4
Nineteen) Social practice certificate		