

The Influence of Combining Intelligent English Education with Sports on Students' Positive Psychological Construction

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Abstract

The research purpose was to check the impact of combining intelligent English education with sports on student's positive psychological construction. The researcher selected 500 students from 10 ordinary universities in a certain province, including 250 humanities students and 250 science students, among the 2021 freshmen. A comprehensive survey was conducted on these 500 freshmen using the SCL-90 scale and commonly used physical exercise methods questionnaire to understand their mental health status and the physical exercise methods they usually use. The research results indicate that physical exercise has a positive impact on the mental health problems of college students. Physical exercise can enhance physical fitness and lay a good foundation for mental health; it can enhance self-confidence and to some extent overcome inferiority complex; Physical exercise can effectively improve interpersonal relationships and reduce loneliness; In addition, physical exercise can also change the mind-set of college students and overcome anxiety and sadness. Therefore, the study concludes that mental health is an important foundation for college students to adapt to social development needs and achieve personal development. Sports have the function of enhancing physical fitness and promoting the development of mental health and have important value for the mental health of college students. The findings of this study emphasize the positive impact of sports on the mental health of college students, providing useful information for educational decision-makers and practitioners. These results support the inclusion of sports in the education system, promoting students' positive psychological construction through a combination of intelligent English education and physical exercise, and helping them better adapt and develop during their university years.

Keywords: Intelligent English, Athletic Sports, Mental Health.

Introduction

With the development of society and changes in educational concepts, more and more attention has been paid to the cultivation of students' comprehensive qualities, among which the cultivation of mental health has become an important focus in the field of education (Zhao, 2022). The psychological health status of students plays an important role in their academic performance, interpersonal relationships, and overall development (Turashvili & Japaridze, 2012). Therefore, studying how to effectively promote students' positive psychological construction has become crucial (Hui & Tsang, 2012). At the same time, the continuous development and application of intelligent education technology have provided new possibilities for education. Intelligent English education, as one of its application methods, combines modern educational technology with the content and methods of English education, with the goal of improving students' language and cross-cultural communication abilities. Sports, as an important form of physical activity, are also widely recognized as an effective means of promoting students' physical and mental health (Yang & Ni, 2022). Based on the

above background, we will combine intelligent English education with sports to study its impact on students' positive psychological construction, aiming to explore a new educational model that comprehensively promotes students' mental health development through the combination of language learning and physical exercise. This educational model aims to improve students' physical fitness and language skills, enhance their self-confidence and teamwork ability, improve interpersonal relationships, cultivate a positive and upward mind-set, and thus promote their comprehensive development (Purnomo et al., 2019). By conducting in-depth research on the impact of intelligent English education combined with sports on students' positive psychological construction, it can provide useful reference and guidance for educational decision-makers, school managers, and educational implementers. Such research helps to optimize educational and teaching models, improve students' mental health levels, and lay a solid foundation for their comprehensive development and future success (Liu, Lin, et al., 2021).

Sports are accompanied by more physical activity and intensity than daily physical activities. With this "hot blooded" exercise, people's emotions become excited and

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excited, this efficient excitement can have a special emotional nurturing effect on people, and good exercise can make people's feelings more profound, and even help them comprehend life. The author will analyse the effects of sports on students' mental health at multiple levels, explore the role of sports in cultivating students' excellent personality traits, and explore the positive effects of different sports items and exercise methods on students' mental health (Guddal et al., 2019). Improving emotional state is the primary indicator used by researchers to examine the impact of physical exercise on mental health. The emotional effects of sports can be divided into short-term and long-term effects. Kim and James (2019) Kim et al. (2019) found that sports have a significant short-term effect on students' emotional state. For example, students often experience high difficulty and intensity sports such as jumping goats, horizontal bars, parallel bars, swimming, and chasing and running, which are accompanied by dangerous and difficult physical activities in daily life. So, this' peak experience 'will create corresponding' conflicts' with students' cowardice and strong sense of challenge. In this type of 'conflict', it is often the students who win the challenge, suppress their weak emotions, significantly reduce their levels of anxiety, depression, tension, and psychological disorder, and significantly increase their level of happiness after energy. Of course, the immediate changes in emotions after physical exercise may be related to the individual's health status, form of activity, intensity of activity, and the interval between activity and emotional measurement (Qin, 2022).

Obviously, the mental health issues of college students have become a prominent contradiction in university education. In order to this end, the Central Committee of the Communist Party of China clearly stated in the "several opinions on further strengthening and improving school moral education work", sschools at all levels and types should provide psychological health education and guidance to students of different age groups through various means, helping them improve their psychological quality, improve their personality, enhance their ability to withstand setbacks, and adapt to the environment. At the same time, many scholars have proposed many prevention and treatment methods, but some scholars believe that sports are a more effective way. Although the basic mechanism of why sports can help to treat mental illness is not completely clear, the research on sports as a way to alleviate or eliminate mental illness has become a key research topic in the field of sports psychology and health psychology now and even in the future (Ma et al., 2022). Therefore, to address this gap, current research aim was to check the influence of combining intelligent English

education with sports on students' positive psychological construction.

The research holds significant importance, particularly freshmen, in a certain province. By using the SCL-90 scale and a physical exercise methods questionnaire, the study provides valuable insights into the prevalence of psychological problems among college students and the impact of sports on their mental well-being. The findings highlight the moderating effect of sports on psychological issues, suggesting that sports therapy can be a convenient and effective intervention for college students' mental health. Moreover, the research emphasizes the role of sports in fostering social interaction, adaptability, and resilience among students, addressing issues such as loneliness and interpersonal communication. The study's experimental approach further demonstrates the specific positive effects of various exercise groups on depression, anxiety, and interpersonal sensitivity symptoms. These results not only contribute to the growing body of knowledge on mental health and physical exercise among college students but also provide practical implications for universities and policymakers to design targeted mental health and physical education programs. By promoting the integration of sports-based interventions into student life, this research aims to foster a supportive and holistic environment for the comprehensive development and well-being of college students, ultimately contributing to a healthier and more positive academic journey for these young individuals. The research was divided into five chapters, after introduction, next chapter was the literature review, then research methodology, then data analysis and results, then discussion and future recommendations.

Literature Review

English education, as a core course in the basic educational stage, is not only aimed at cultivating students' language application ability and language quality, but also committed to cultivating students' comprehensive quality. Among comprehensive qualities, psychological quality occupies an important position, as the quality of psychological quality directly affects the development and improvement of other qualities. With the development of society, people's understanding and cognition of the connotation of health have also undergone changes. In the traditional sense, health mainly refers to the health of bodily functions, that is, the absence of diseases and the ability to prevent and resist certain diseases. However, the concept of health under the new concept is more diverse, including various aspects closely related to human survival and social activities such as physical, psychological, moral, and

behavioural patterns, and has developmental potential. Driven by this new understanding of the connotation of health, people have gained a new understanding of the functions of sports and are beginning to realize that participating in sports activities is not only limited to fitness, but also has a positive impact on achieving the development of physical and mental health (Arsović et al., 2020). Therefore, this article aims to study and analyse the impact of sports on students' mental health, in order to fully utilize the special effects of physical education teaching in universities and improve students' awareness of physical fitness (Li et al., 2014). This has important practical significance. Sports have a variety of effects on kids' mental health. First off, participating in sports can help pupils relieve tension and anxiety and develop better emotional regulation abilities (Osborne et al., 2014). Pupils may deal with negative emotions, distract attention, lessen academic and life pressure, and improve their psychological state and psychological resilience by engaging in sports activities. Second, participation in athletics boosts pupils' self-confidence and self-esteem (Fox & Magnus, 2014).

Students may experience their growth and successes via exercise and competition, which will boost their trust as well as their perception of value (Feltz, 2007). Sports may help children develop a spirit of collaboration and team consciousness as well as a sense of belonging and self-worth. Additionally, participation in athletics might help pupils focus and pay attention in class (Wulf & Su, 2007). Students who participate in sports must focus, learn the necessary techniques and rules, and keep their attention throughout contests. The ability of pupils to focus and maintain their attention while learning and other tasks has been positively impacted by this instruction. In addition, sports also play an important role in students' social skills and interpersonal relationships (Eime et al., 2013). In sports activities, students have the opportunity to interact and communicate with their classmates, establish friendship and good interpersonal relationships. This is crucial for cultivating students' social skills, teamwork spirit, and good interpersonal skills.

In short, sports play a positive role in the development of students' mental health. By participating in sports activities, students can release stress and improve their emotional management skills; Enhance self-confidence and self-esteem; Improve attention and concentration; Cultivate social skills and establish interpersonal relationships. Therefore, physical education teaching in universities should fully utilize its special functions, guide students to pay attention to physical fitness, and promote their physical and mental health development. Wu et al. (2021), and others believe that the detection of playback voice answer

sheets is an urgent issue for intelligent language learning systems. The traditional features used in replay speech detection are usually extracted from the power spectrum. The previous discussion in the literature review is being highlighted the significance of English education in cultivating students' comprehensive qualities, particularly their psychological well-being, as an essential component of overall development. The evolving concept of health encompasses physical, psychological, moral, and behavioural aspects, recognizing the potential impact of sports on achieving holistic health. Therefore, keeping in view previous discussion, current research aim to check the Influence of Combining Intelligent English Education with Sports on Students' Positive Psychological Construction. The positive psychological construction of sports on students is predicted in Figure.1 below.

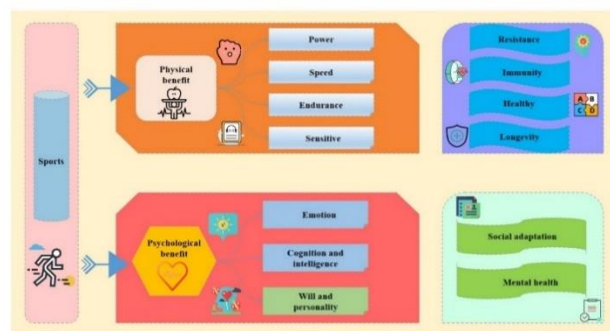


Figure 1: The Positive Psychological Construction of Sports on Students.

Research Methods

The research aimed to investigate the mental health status and physical exercise habits of 500 freshmen from 10 ordinary universities in a certain province, consisting of 250 humanities students and 250 science students (Wu et al., 2021). To acquire pertinent data, the study combined questionnaire research with experimental techniques. First, a thorough survey was carried out to evaluate the participants' physical activity levels and mental health using the SCL-90 scale and a physical exercise techniques questionnaire (Wang et al., 2023). The SCL-90 scale was a well-liked tool for evaluating mental health that included a range of issues like rage, depression, anxiety, and interpersonal relationships. Researchers were able to distinguish disparities in the physical and mental health habits of science and humanities students by statistically analysing the survey data. The effects of various exercise types on psychological diseases including interpersonal sensitivity, anxiety, and depression were also examined using an experimental technique (Cao & Hao, 2021). One of five activity groups—which comprised basketball,

volleyball, football, taijiquan, and aerobics—were assigned to 50 students with these concerns at random. Each group exercised for an hour per week for a total of six weeks. Pre and post-experiment self-assessment tests on six indicators were used to evaluate changes in adaptability, tolerance, control, attention level, social interaction ability, and resilience. The collected data were analysed using statistical tests to determine the significance of the results and to understand the influence of sports on mental health.

Results and Analysis

A survey was conducted on the mental health status of 500 college students using the SCL-90 scale, and it was found that 21% of them had psychological problems, followed by depression, anxiety, interpersonal sensitivity, compulsion, and paranoia. Fifty college students with obvious symptoms of

depression, anxiety, and interpersonal sensitivity underwent self-assessment tests on six indicators: adaptability, tolerance, control, attention level, social interaction ability, and resilience before and after the experiment (see Table 1) (Liu, 2021).

Table 1

Comparison of The Overall Evaluation of Six Indicators Among 50 College Students Before and After the Experiment

	Before the Experiment	After the Experiment
	Good, generally, poor	Good, generally, poor
n	4 12 34	40 5 5
%	3.4 17 80	74 21 6.8

In the experiment, three groups of subjects were evenly assigned to each exercise group, and the factor scores related to their symptoms also changed after the experiment, as shown in Table 2.

Table 2

Comparison of Main Factor Scores of SCL-90 Scale Among 50 College Students Before and After the Experiment

	Basketball	Volleyball	Football	Aerobics	Shadow Boxing
Before the depression experiment	31±2.32	29.45±3.32	32±2.75	32.36±4.25	33±2.76
After the experiment	21±2.76	21±3.32	18±4.76	19±3.75	20±4.76
Before Anxiety Experiment	22±2.36	23±3.02	22±2.326	22±2.76	25.23±2.56
After the experiment	23±2.65	13±4.22	23±3.76	20±2.62	10.23±2.45
Before the interpersonal sensitivity experiment	24±4.32	22±3.12	21±2.36	25±4.25	24.26±3.76
After the experiment	10±2.12	9.08±2.04	12.32±3.75	23±3.76	24.23±3.76

Analysis Results

From Table 1, it can be seen that sports have a significant moderating effect on the psychological problems of college students. Because sports therapy is convenient and easy to implement, not limited by environmental conditions, and does not require excessive financial and material resources, it is easy to self-regulate. It is actually a way of influencing the psychological status of college students from the outside to the inside by improving their physical condition. This approach is more effective for college students who are unwilling to admit to having psychological problems or suffering from mental illnesses and are even less willing to seek counseling or treatment at psychological treatment institutions. Because sports are conducted in a certain social environment, they can break down the boundaries of age, gender, identity, grade, and region, and cooperate with each other, this makes interpersonal relationships more coordinated, overcoming loneliness, forgetting worries and pain, and improving the social interaction and adaptability of college students; Promote interpersonal communication and coordinate interpersonal relationships among college students (Fang, 2021).

At present, the proportion of only children in most schools is increasing year by year, and some only child college students who lack playmates to grow up are relatively lacking, due to their introverted and withdrawn personality, it is easy to cause poor communication skills, lack of emotional communication between people, and alienation of interpersonal relationships. College students participate in various physical activities in the form of individuals or groups, through mutual contact, learning, cooperation, confrontation, etc., interpersonal communication becomes more direct and extensive, and it is easy to form a specific classroom society, in this specific classroom society, there are frequent and intense exchanges of ideas and behaviors between individuals and collectives, causing participants to frequently encounter the problem of how to handle interpersonal relationships. They can also overcome loneliness, forget worries and pain, expand social interaction, and improve social adaptability in sports activities. The reality reveals that introverted individuals have stronger social needs than extroverted individuals, which can be met through collective activities (Shi, 2021). It can be seen that sports activities play an important role in promoting college students' interaction, overcoming loneliness, increasing or decreasing their adaptability,

developing their social skills and improving their flexibility (Chai, 2021).

In daily life and study, we often see scenes where people who handle relationships well, they always maintain an optimistic attitude when facing anything, and there is no sense of shyness when communicating with strangers, always better at expressing oneself than those who handle interpersonal relationships poorly, even when communicating with others for the first time, it can make them understand the meaning they want to express very intuitively, they are better at getting along with others, in order to improve their familiarity and generate stronger attraction to each other, and their love for participating in sports is one of the reasons for forming an optimistic mindset. The process of sports is a process of communication between individuals, whether it is a mainstream sport, team sports such as football and basketball, as well as individual athletics events such as square dance, various rope skipping and kicking sports, as well as individual athletics events such as square dance, and various folk sports such as rope skipping and kicking can all form communication between people. The purpose of exercise can be achieved through communication between people, which is also the interactivity brought about by exercise itself, through continuous communication and exchange, we can enhance our friendship with each other (Wei, 2021). At the same time, it can also expand one's social circle, make more like-minded friends, and eliminate one's psychological loneliness. And sports have a significant effect on eliminating loneliness and improving interpersonal relationships (Liu & Tsai, 2021).

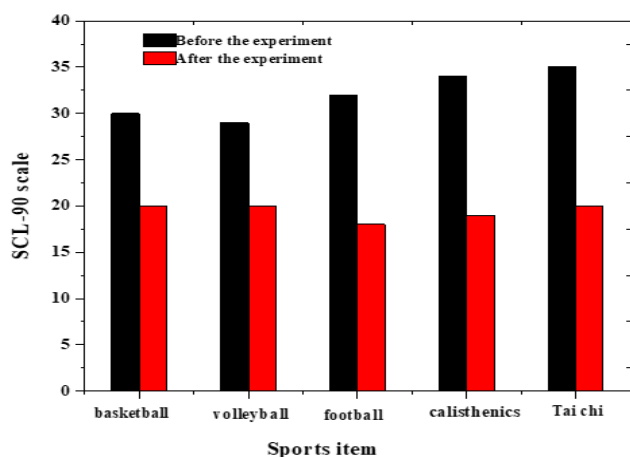


Figure 2: Comparison of Data Between Students in Different Exercise Groups Before and After the Experiment.

From Table 2 and Figure 2, it can be seen that there is a significant difference ($P < 0.05$) in the data of students in the depression group before and after the experiment in each exercise group, indicating that various forms of exercise can

significantly improve depression symptoms; The students in the anxiety group showed significant differences only in the volleyball and Tai Chi exercise groups, indicating that only volleyball and Tai Chi have an improvement effect on anxiety; The students in the interpersonal relationship sensitive group showed significant differences in the basketball, volleyball, and football exercise groups. Obviously, sports have the function of promoting the mental health of college students (Jingbo, 2021).

Sports have been recognized as a method of psychotherapy. According to a survey, 6% of 1000 psychologists believe that physical exercise should be used as a treatment to eliminate depression, 6% of people believe that physical exercise is one of the effective methods for treating depression, there have been reports of the effectiveness of two physical activity methods in treating hospitalized patients with severe depression, one is walking or jogging. Another way is to play football, volleyball, or do gymnastics exercises, combined with relaxation time. The jogging or walking group practiced continuously for 30 minutes each time, three times a week, for a total of 8 weeks. The mixed group of patients had activities twice a week, each lasting 40 minutes, for a total of 8 weeks. On the third day of each week, the mixed group underwent relaxation exercises, and the results showed that, patients in the jogging or walking group reported a significant reduction in inhibitory sensation and physical symptoms. And reported an increase in self-esteem and a significant improvement in physical condition, while the mixed group of patients reported no physiological or psychological changes. Some studies also suggest that physical exercise can significantly reduce students' pre exam anxiety (Xu & Gu, 2022).

Firstly, in sports, with the intense progress of sports, individuals experience emotional fluctuations, ranging from the joy and excitement of victory to the melancholy and anxiety of failure, moreover, various mindsets often intersect, which requires college students to adjust their mindset in a timely manner, use emotional motivation to regulate their abilities, and maintain coordination and consistency between actions and emotions, only in this way can we perform to the expected level. Especially in intense sports, people's emotions are often more difficult to control, and the authoritative performance of sports game rules encourages athletes to strive to control their emotions well. So, regularly participating in sports activities can gradually improve college students' self-regulation and control abilities. Secondly, in sports, people always encounter various difficulties and obstacles, among them, there are psychological factors from within, such as nervousness, fear, loss, hesitation, etc; There are also complex and ever-

changing factors from outside, such as geography, climate environment, and sports scenes. In order to achieve the goal, it is necessary to withstand various pressures from within and outside, strive to overcome difficulties, and eliminate obstacles. Therefore, regularly participating in sports can gradually expand students' psychological endurance space and improve their psychological endurance. Furthermore, in sports, participants are required to abide by the same sports rules, and only through mutual cooperation can the group have a stronger competitiveness. Due to many college students being the only child in their families, they have been spoiled by their parents since childhood and do not know how to compete, even afraid of competition. At the beginning, when encountering competition on the sports field, one may become overly nervous, have distorted movements, be at a loss, or simply act recklessly, but by constantly participating in physical exercise, one gradually becomes calm and knows how to participate in competition and cooperate with peers. The sense of fair competition and collaborative spirit formed by college students in sports also has profound significance for forming a correct work attitude and professional spirit when entering society in the future (Liu & Yang, 2021).

Discussion and Implications

In a highly competitive society, people often experience emotional reactions such as depression and tension, sports can shift individuals' unpleasant emotions and help them escape from their troubles. College students often experience anxiety due to numerous exams, competition, and concerns about future employment. Regular exercise can regulate tension, alleviate psychological stress, and reduce students' anxiety and psychological disorders; Can effectively improve the depression situation of college students and alleviate the degree of depression; Relieve symptoms of compulsion; One of the main reasons is that participants in physical activities can experience the pleasure of exercise, which means that individuals will experience satisfaction, pleasure, and comfort after exercising. Psychologists believe that physical activity is an important way to properly activate the central nervous system system and get a happy level. Moderate load of physical exercise can promote the release of a polypeptide substance - endorphin, it can make people feel a comfortable and happy mood directly after exercising. Therefore, participating in sports, especially those that one loves or excels at, can bring joy, boost one's spirit, cultivate one's character, and generate a good emotional state (Liu, Lin, et al., 2021).

(1) The optimal psychological state that sports can generate.

Students will experience optimal sports pleasure in

appropriate sports activities. This kind of sports pleasure has a significant impact on students' emotions and emotions. Sports have the function of venting, neutralizing, offsetting, and combating unpleasant emotions, through sports, people not only unleash energy, but more importantly, release accumulated unpleasant emotions. Sports and exercise, accompanied by an increase in blood flow and oxygen uptake, have a good effect on the central nervous system and can control depression, as depression is usually associated with low adrenaline secretion, which is increased by exercise (Zhao & Cai, 2021).

(2) Sports can enhance a sense of self-control. Students have developed a sense of control and self-control through physical exercise, they can experience more sense of success and competition in sports, as well as the release of a sense of oppression through exercise, with a sense of satisfaction, it will make the exerciser more consciously engage in sports, and this positive emotional experience has direct psychological benefits (Lanlan et al., 2021).

(3) Sports can help form an independent personality. Sports contribute to the formation of personality, because on the one hand, sports are based on confrontation and competition, which facilitates the cultivation of qualities such as resilience, resilience, confidence, bravery, and wit; On the other hand, sports are centered around progress and friendship, facilitating the cultivation of qualities such as honesty, tolerance, understanding, and mutual love, as well as strengthening and improving people's organizational, disciplinary, and collective values (Ran et al., 2021).

(4) Sports can help cultivate the willpower to strive and progress. Sports are essentially the process of overcoming oneself, overcoming oneself, purifying oneself, and improving oneself, thus, through the refinement of a certain sports activity and the cultivation of sports spirit, a positive and healthy psychological orientation is gradually formed to achieve the sublimation of personality. Almost any sports require a spirit of courage and fearlessness, at the same time, most of them are collective and competitive sports, and their level of ability, cultivation, and charm will all be reflected, giving them a more realistic understanding of themselves, it cultivates people's courage and tenacity, as well as the willpower to strive for progress. Victory and defeat are always accompanied by sports. Sports encourage people to yearn for and pursue victory, and also cultivate the courage to accept failure, which is more meaningful for a person's growth. It is not difficult to maintain an

enterprising spirit in victory and success, but it is difficult to maintain an enterprising spirit in failure.

- (5) Sports can improve interpersonal relationships. Sports are beneficial for emotional communication and the relief of self-claustrophobia, making it easier to form friendly relationships with others. College students can use exercise to understand, adjust, and transform their psychological qualities and behavioural patterns. Through physical exercise, the improvement of physical fitness is inseparable from the intrinsic motivation of exercise, and there is a positive correlation between the level of physical exercise and mental health (Deslandes et al., 2009; Xue, 2021).

Implications

The study consists of both theoretical and practical implications in the field of mental health and physical education for college students. Theoretically, this research underscores the importance of incorporating sports-based interventions in promoting the mental well-being of college students. The significant moderating effect of sports on psychological problems suggests that universities and educational institutions can implement sports therapy programs as a convenient and effective method to address mental health issues among students. By encouraging regular participation in sports activities, colleges can provide students with a valuable tool to self-regulate their emotions and improve their mental resilience. Moreover, the research highlights the role of sports in fostering social interaction and overcoming loneliness, especially for introverted individuals and only children. Creating a supportive and inclusive environment through sports activities can enhance students' communication skills and promote positive interpersonal relationships, contributing to their overall development and adaptability in both academic and social settings. Additionally, the study's experimental approach demonstrates the specific positive effects of various exercise groups on depression, anxiety, and interpersonal sensitivity symptoms, providing valuable insights for designing targeted exercise interventions for specific mental health issues. However, this study advances our theoretical knowledge of the connection between college students' physical activity and mental health. The SCL-90 scale, and other well-known assessment instruments enable a thorough assessment of students' mental health state, laying the groundwork for further study in this area. The results confirm the value of exercise in boosting mental health and its potential as a treatment for depression and anxiety. They also support the rising acceptance of sports as a kind of psychotherapy. The study also emphasizes the psychological

advantages of participating in sports, including improved self-regulation, psychological endurance, and the growth of teamwork abilities. These theoretical ramifications advance knowledge of the significant role that sports may play in promoting psychological well-being and mental toughness in college students, demonstrating that this issue cannot be neglected in the future.

Conclusion and Future Recommendations

Interactions between sports and mental health are constant. The mental health of an individual can benefit from sports. During the process of participating in sports, participants have a subtle and positive impact on their mental health, enabling them to have new changes and cognition in various aspects of mental health. At the same time, there is a positive correlation between the level of mental health and physical activity. Sports are a process of showcasing oneself, while mental health is a process of individual self-formation. Only by fully realizing one's self-worth can individuals better improve themselves in terms of mental health. College students are in their late adolescence, and in the process of psychological maturity, they are prone to psychological stress and depression when facing a series of major practical problems such as tense learning, complex interpersonal relationships, future work and ideals, personal problems, and social competition, which can affect their physical and mental health. Sports are of great significance in promoting the mental health of college students, in order to promote the mental health of college students, physical education in universities should it is recommended that:

- 1) Universities should optimize the environment for physical education teaching, physical education classes are a basic form of physical activity for college students, and a good teaching and exercise environment will also affect the effectiveness and emotions of college students' exercise, so universities should strengthen the construction and maintenance of sports venues and facilities, purchase sufficient sports equipment, and strive to improve sports teaching and sports environment.
- 2) College physical education teachers should learn to apply psychological principles, actively carry out publicity work both inside and outside of class, and provide targeted psychological health education courses, so that students can recognize the importance of psychological health and the positive promoting effect of sports on psychological health and can consciously participate in sports.
- 3) Universities should adhere to the concept of "health first" and cooperate with various departments to organize students to establish various sports associations on

campus and carry out various forms of sports exchange activities, for example, the school wide annual school sports meet, various sports leagues (volleyball league, basketball league, football league, etc.) on campus, etc., help students free themselves from busy learning and enjoy the joy of life from various sports activities.

- 4) Schools can develop a comprehensive curriculum plan that organically combines intelligent English education with sports. Such courses can cover language learning and exercise and incorporate elements of mental health education to help students achieve comprehensive development in multiple aspects.
- 5) Schools should provide diverse sports options to meet the interests and needs of different students. Encourage students to participate in various sports activities, such as ball games, outdoor adventures, dance, and yoga, to promote the development of physical and mental health.
- 6) Utilize intelligent English learning tools such as speech recognition technology and online learning platforms to provide personalized English learning support. Such tools can provide personalized learning suggestions and feedback based on students' level and needs, increasing their learning motivation and sense of achievement.

Research Limitation and Future Directions

Along with the significant findings, contributions and conclusion, still study have several limitations that could be addressed in future for increasing research reliability. Firstly, study was conducted in a specific province with a

relatively small sample size, which may limit the generalizability of the findings to other regions or populations. Therefore, future studies could include participants from a more diverse range of provinces or countries to enhance the external validity of the results. Secondly, research primarily relied on self-report measures, which might be susceptible to social desirability bias and recall bias. To strengthen the research, incorporating objective measures and behavioural assessments alongside self-reports could provide a more comprehensive understanding of the relationship between mental health and physical exercise. Additionally, the absence of a control group in the experimental method makes it challenging to establish causal relationships between physical exercise and mental health improvements. Future research could consider employing randomized controlled trials with control groups to better assess the impact of physical exercise interventions. Furthermore, the six-week intervention duration may not fully capture the long-term effects of physical exercise on mental health. Conducting longitudinal studies with extended follow-up periods could provide more robust evidence on the sustained benefits of regular physical exercise. Finally, the study focused on specific exercise groups, and including a wider range of physical activities could shed light on the diverse benefits of different exercise types on mental health outcomes among college students. Addressing these limitations would strengthen the research's validity and contribute to the development of more targeted and effective strategies for promoting mental well-being and physical exercise habits among college students in same country or other countries.

References

- Arsović, N., Đurović, R., & Rakočević, R. (2020). Influence of physical and sports activity on mental health. *Facta Universitatis, Series: Physical Education and Sport*, 559-568. <https://doi.org/10.22190/FUPES190413050A>
- Cao, Q., & Hao, H. (2021). [Retracted] Optimization of Intelligent English Pronunciation Training System Based on Android Platform. *Complexity*, 2021(1), 5537101. <https://doi.org/10.1155/2021/5537101>
- Chai, Y. (2021). Design and implementation of English intelligent communication platform based on similarity algorithm. *Complexity*, 2021(1), 5575417. <https://doi.org/10.1155/2021/5575417>
- Deslandes, A., Moraes, H., Ferreira, C., Veiga, H., Silveira, H., Mouta, R., Pompeu, F. A., Coutinho, E. S. F., & Laks, J. (2009). Exercise and mental health: many reasons to move. *Neuropsychobiology*, 59(4), 191-198. <https://doi.org/10.1159/000223730>
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*, 10, 1-21. <https://doi.org/10.1186/1479-5868-10-98>
- Fang, C. (2021). Intelligent online English teaching system based on SVM algorithm and complex network. *Journal of Intelligent & Fuzzy Systems*, 40(2), 2709-2719. <https://doi.org/10.3233/JIFS-189313>
- Feltz, D. L. (2007). Self-confidence and sports performance. *Exercise and Sport Sciences Reviews*, 16(1), 423-458. <https://ess220.wordpress.com/wp-content/uploads/2008/02/feltz-1988-highlighted.pdf>
- Fox, K. R., & Magnus, L. (2014). Self-esteem and self-perceptions in sport and exercise. In *Routledge Companion to Sport*

- And Exercise Psychology* (pp. 34-48). Routledge. <https://www.routledge.com/Routledge-Companion-to-Sport-and-Exercise-Psychology-Global-perspectives-and-fundamental-concepts/Papaioannou-Hackfort/p/book/9780415730327>
- Guddal, M. H., Stensland, S. Ø., Småstuen, M. C., Johnsen, M. B., Zwart, J.-A., & Storheim, K. (2019). Physical activity and sport participation among adolescents: associations with mental health in different age groups. Results from the Young-HUNT study: a cross-sectional survey. *BMJ open*, 9(9), e028555. <https://doi.org/10.1136/bmjopen-2018-028555>
- Hui, E. K., & Tsang, S. K. (2012). Self-determination as a psychological and positive youth development construct. *The Scientific World Journal*, 2012(1), 759358. <https://doi.org/10.1100/2012/759358>
- Jingbo, J. (2021). Resource allocation of English intelligent learning system based on reinforcement learning. *Journal of Intelligent & Fuzzy Systems*, 40(4), 6839-6852. <https://doi.org/10.3233/IIFS-189516>
- Kim, J., & James, J. D. (2019). Sport and happiness: Understanding the relations among sport consumption activities, long- and short-term subjective well-being, and psychological need fulfillment. *Journal of Sport Management*, 33(2), 119-132. <https://doi.org/10.1123/jsm.2018-0071>
- Lanlan, P., Liangyu, H., & Zhengya, L. (2021). Simulation of English part-of-speech recognition based on machine learning prediction algorithm. *Journal of Intelligent & Fuzzy Systems*, 40(2), 2409-2419. <https://doi.org/10.3233/IIFS-189236>
- Li, F., Chen, J., & Baker, M. (2014). University students' attitudes toward physical education teaching. *Journal of Teaching in Physical Education*, 33(2), 186-212. <https://doi.org/10.1123/jtpe.2012-0187>
- Liu, G. (2021). Intelligent English writing system based on fusion of herding effect and artificial intelligence. *Journal of Intelligent & Fuzzy Systems*, 40(4), 6877-6887. <https://doi.org/10.3233/IIFS-189519>
- Liu, J., Lin, L., & Liang, X. (2021). Intelligent system of English composition scoring model based on improved machine learning algorithm. *Journal of Intelligent & Fuzzy Systems*, 40(2), 2397-2407. <https://doi.org/10.3233/IIFS-189235>
- Liu, L., & Tsai, S.-B. (2021). Intelligent recognition and teaching of English fuzzy texts based on fuzzy computing and big data. *Wireless Communications and Mobile Computing*, 2021(1), 1170622. <https://doi.org/10.1155/2021/1170622>
- Liu, X., & Yang, Z. (2021). Computer-aided teaching mode of oral English intelligent learning based on speech recognition and network assistance. *Journal of Intelligent & Fuzzy Systems*, 39(4), 5749-5760. <https://doi.org/10.3233/IIFS-189052>
- Ma, C., Xu, Q., & Li, B. (2022). Comparative study on intelligent education research among countries based on bibliographic coupling analysis. *Library Hi Tech*, 40(3), 786-804. <https://doi.org/10.1108/LHT-01-2021-0006>
- Osborne, M. S., Greene, D. J., & Immel, D. T. (2014). Managing performance anxiety and improving mental skills in conservatoire students through performance psychology training: a pilot study. *Psychology of Well-being*, 4, 1-17. <https://doi.org/10.1186/s13612-014-0018-3>
- Purnomo, I., Tomoliyus, T., & Burhaein, E. (2019). Development of learning activities playing a ball on a goal to improve manipulative skills for lower class students. Proceedings of the 1st International Conference on Science and Technology for an Internet of Things, 20 October 2018, Yogyakarta, Indonesia,
- Qin, M. (2022). A study on automatic correction of English grammar errors based on deep learning. *Journal of Intelligent Systems*, 31(1), 672-680. <https://doi.org/10.1515/jisys-2022-0052>
- Ran, D., Yingli, W., & Haoxin, Q. (2021). Artificial intelligence speech recognition model for correcting spoken English teaching. *Journal of Intelligent & Fuzzy Systems*, 40(2), 3513-3524. <https://doi.org/10.3233/IIFS-189388>
- Shi, Y. (2021). Study on intelligent construction of English-Chinese bilingual context model based on CBR. *Journal of Intelligent & Fuzzy Systems*, (Preprint), 1-8. <https://doi.org/10.3233/IIFS-219123>
- Turashvili, T., & Japaridze, M. (2012). Psychological well-being and its relation to academic performance of students in Georgian context. *Problems of Education in the 21st Century*, 49, 73. <https://www.proquest.com/openview/c5c9bed7e5e83c93a60c16f079234a84>
- Wang, Q., Tang, L., & Wang, Y. (2023). Potential applications of the metaverse in higher English education. *Open Journal of Social Sciences*, 11(1), 450-459. <https://doi.org/10.4236/jss.2023.111031>
- Wei, X. (2021). Simulation of English intelligent system based on CA-IAFSA algorithm and artificial intelligence. *Journal of Intelligent & Fuzzy Systems*, (Preprint), 1-11. <https://doi.org/10.3233/IIFS-189796>
- Wu, Q., Guo, H., & Xiong, S. (2021). Fake Speech Answer-Sheet Detection on Intelligent Learning App Based on Block-Based Deep Neural Network. In *Journal of Physics: Conference Series* (Vol. 1952, pp. 022030). IOP Publishing.

<https://doi.org/10.1088/1742-6596/1952/2/022030>

- Wulf, G., & Su, J. (2007). An external focus of attention enhances golf shot accuracy in beginners and experts. *Research Quarterly for Exercise And Sport*, 78(4), 384-389. <https://doi.org/10.1080/02701367.2007.10599436>
- Xu, Y., & Gu, W. (2022). Research on the impact of embedded intelligent robots on english news dissemination. *Wireless Communications and Mobile Computing*, 2022(1), 2127411. <https://doi.org/10.1155/2022/2127411>
- Xue, J. (2021). Machine translation of English content: a comparative study of different methods. *Journal of Intelligent Systems*, 30(1), 980-987. <https://doi.org/10.1515/jisys-2021-0150>
- Yang, Y., & Ni, L. (2022). The Influence of Sports on College Students'physical and Mental Temperament and Personality. *Psychiatria Danubina*, 34(suppl 5), 130-130. <https://hrcak.srce.hr/file/409960>
- Zhao, J. (2022). Integrating mental health education into french teaching in university based on artificial intelligence technology. *Journal of environmental and Public Health*, 2022(1), 1046813. <https://doi.org/10.1155/2022/1046813>
- Zhao, T., & Cai, Y. (2021). Improvement of English key competences based on machine learning and artificial intelligence technology. *Journal of Intelligent & Fuzzy Systems*, 40(2), 2069-2081. <https://doi.org/10.3233/JIFS-189228>