

Intrinsic and Extrinsic Motivation Affecting Learning Effectiveness in Physical Education of Junior College Students in China

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ABSTRACT

The effectiveness of learning among college students in China in the domain of physical education is shaped by how they perceive intrinsic and extrinsic motivation. This study evaluates the intrinsic and extrinsic motivations of Physical education junior college students' affecting the learning effectiveness from three universities in Guangdong, Province, China. There were 366 students chosen as participants in the study using a stratified random sampling method without making any special choices. This study is a descriptive- comparative- correlational research utilizing standard questionnaire. To ensure the valid and systematic presentation, analysis, and interpretation of the data the following statistical tools were obtained: frequency count and percentage, weighted mean calculation, ranking, standard deviation, independent sample T-tests, one way ANOVA and Pearson Moment Correlation. The study revealed that the consistent recognition of intrinsic motivations as moderately effective underscores their critical role in driving student engagement in physical education, highlighting the importance of choice, progress, meaningfulness, and competence. While extrinsic motivations are seen as moderately effective, their role is secondary to intrinsic factors, suggesting that social approval, external rewards, and competition still contribute to student motivation. The perceived effectiveness of factors such as autonomy, a supportive environment, and mastery-oriented feedback underscores their importance in enhancing learning experiences. The strong correlation between both intrinsic and extrinsic motivators with learning effectiveness emphasizes the essential link between motivation and successful learning outcomes in physical education. Based on the study's findings, it is recommended that educators tailor motivational strategies to meet the specific needs and preferences of students, recognizing the universal value of intrinsic motivators while being mindful of individual differences, regardless of sex, specialization, or age. To improve learning outcomes, educators should provide opportunities for autonomy in decision-making, create a supportive and encouraging learning environment, and offer feedback that emphasizes mastery and improvement. Additionally, recognizing the strong connection between student motivation and learning outcomes, educators should foster both intrinsic and extrinsic motivation. This approach can enhance students' perceived learning effectiveness, leading to improved academic performance and engagement in physical education. Implementing these strategies will enable educators to better support student motivation and success in physical education.

KEYWORDS

Intrinsic Motivation; Extrinsic Motivation; Learning Effectiveness; Physical Education; Junior College; Students in China.

1. INTRODUCTION

Physical education (PE) is a critical component of educational curricula designed to promote holistic well-being, foster lifelong healthy habits, and enhance cognitive and physical skills. Within the realm of PE, the motivational factors that drive students to actively participate in physical activities significantly affecting the overall effectiveness of the learning experience. This research endeavors to explore the intricate dynamics of intrinsic and extrinsic motivation in the context of PE, with a specific focus on junior college students.

Junior college, as a transitional phase between secondary education and higher studies, marks a crucial period in the academic and personal development of students. This demographic, often characterized by diverse aspirations and evolving identities, presents a unique context for investigating the motivational forces that shape their engagement with physical education. While previous research has delved into motivation in PE across various educational levels, there is a noticeable gap in literature that specifically addresses the distinctive needs and challenges faced by college students in China.

The prevalence of reduced physical activity among adolescents in the contemporary era has become a notable phenomenon (Liu et al., 2021). This decline in physical activity is often linked to the suboptimal quality of physical activities within the school environment. Conversely, active participation in physical activity by students during adolescence has been identified as a key contributor to an improved quality of life; (Evaristo et al., 2019;) (Guijarro-Romero et al., 2020; Viciania et al., 2019). On the flip side, poor quality of physical activity in adolescents can give rise to adverse physical and mental conditions, including obesity and cardiovascular disease. In the educational setting, the limited involvement of students in the learning process may be influenced by their satisfaction levels during class participation (Behzadnia et al., 2018). Consequently, educators face the challenge of fostering a conducive learning environment that motivates students to actively engage in the assigned movement tasks (Johnson et al., 2019). This underscores the importance of both intrinsic and extrinsic factors in cultivating effective learning experiences.

The gradual and significant decline in interest observed in the subject of Physical Education (PE) from elementary to high school levels indicates a lack of motivation, a critical element for fostering active student participation in the lessons. In a study conducted by Lonsdale and colleagues as cited by, Papaioannou, (2020) findings revealed that students who possessed intrinsic motivation in a subject were 20% more engaged compared to students with extrinsic motivation (e.g., external pressure). Similarly, Cid, (2019) substantiated that intrinsic motivation played a pivotal role in determining a moderate or vigorous level of physical activity within the context of PE.

The importance of understanding motivation in the context of PE for junior college students lies in the potential impact on their overall development. Adolescence is a phase marked by increased autonomy, self-awareness, and varied extracurricular interests. As such, the motivational drivers influencing physical activity participation may differ significantly from those observed in younger or older students. By unraveling these motivations, educators and policymakers can tailor PE programs to meet the specific needs of college students, thereby maximizing the learning effectiveness of these programs and in promoting both physical health and overall well-being.

Motivation takes the form of internal and external forces that propel individuals to engage in actions, persisting with an inner drive to accomplish tasks (Badubi, 2017). According to Gribanova (2020), motivation involves providing incentives to stimulate actions and the process of encouraging individuals to complete tasks. Intrinsic motivation is characterized by activities driven by an individual's desires, preferences, personal interests, and inherent enjoyment of the task (Begum & Hamzah, 2017). On the other hand, extrinsic motivation involves engaging in activities in anticipation of rewards or to avoid punishment. In comparison, intrinsic motivation is believed to have a more profound impact on individuals than extrinsic motivation. Intrinsic motivation is associated with

individuals undertaking activities for the inherent satisfaction of doing them, without expecting external rewards.

Learning effectiveness, as defined by the degree to which learning goals are achieved, encompasses the attainment of learning outcomes, which are statements specifying what a learner is expected to know, comprehend, or demonstrate upon completing a learning process (Kintu et al., 2017). These learning outcomes serve as benchmarks for educational achievement, encapsulating various aspects of the learning experience, including student perceptions of learning objectives, the learning process itself, performance enhancements, and the attainment of desired results (Persky et al., 2020).

The effectiveness of learning outcomes is significantly affected by the motivational factors at play, with intrinsic and extrinsic motivation playing pivotal roles in shaping the learning journey. Intrinsic motivation, rooted in an individual's internal desires, personal interests, and inherent enjoyment of a task, contributes to a genuine and self-driven engagement with the learning process. Students who are intrinsically motivated are more likely to exhibit sustained interest, persistence, and a deep sense of satisfaction in their educational endeavors.

On the other hand, extrinsic motivation involves engaging in learning activities for external rewards or to avoid punishment. While external motivators such as grades, praise, or tangible rewards can stimulate performance, they may not necessarily foster a lasting or genuine interest in the subject matter. The effects of extrinsic motivation on learning effectiveness often depend on the nature and sustainability of the external incentives.

The researcher has consistently committed her expertise to the realm of education, demonstrating unwavering dedication while holding a position at the Guangdong Vocational College of Dance and Drama. Across her tenure, she has actively engaged in academic and professional activities, showcasing a steadfast commitment to her responsibilities. This enduring involvement not only emphasizes her profound passion for the field but also underscores the critical role of intrinsic and extrinsic motivation as vital components in shaping the landscape of physical education teaching and learning within the college where she is currently teaching. Her sustained dedication illuminates the importance of these motivational factors in driving learning effectiveness in education practices.

In 2022, the researcher assumed leadership roles, overseeing two notable university-level projects. The initial project, titled "Feasibility Analysis of Pilates Exercise in College Sports - Using Guangdong Vocational College of Dance and Drama as a Case Study," entailed a thorough examination of the viability of incorporating Pilates exercise into the college sports curriculum. By specifically focusing on the Guangdong Vocational College of Dance and Drama, this endeavor aimed to evaluate the practicality and feasibility of integrating Pilates into the framework of physical education. In doing so, it sought to provide valuable insights into the potential benefits and challenges associated with introducing Pilates, emphasizing the researcher's recognition of the intrinsic and extrinsic motivation elements crucial in shaping learning effectiveness in physical education practices.

Concurrently, the researcher spearheaded another substantial project entitled "Research on the Path of Constructing College Physical Education Informatization Reform Based on the Combination of Sports and Art." This initiative explored novel strategies to reshape and revamp college physical education by leveraging the intersection of sports and art within the domain of informatization. By undertaking these university-level projects, researcher not only showcased her leadership prowess and commitment to advancing the fields of sports and art within the educational landscape but also demonstrated a proactive engagement in guiding educational reforms and advocating for holistic approaches to physical education, emphasizing the significance of both intrinsic and extrinsic motivation in the teaching and learning process.

There is a notable research gap in the existing literature on intrinsic and extrinsic motivation in PE classes concerning its impact on students' learning effectiveness, particularly in terms of demographic

profiles such as sex, age, and specialization in colleges and universities at Guangdong China. Limited studies have systematically investigated how motivational factors vary across diverse demographic groups within the student population, leaving a gap in our understanding of how individual characteristics may influence the efficacy of motivation strategies in physical education. Addressing this gap could provide valuable insights into tailoring motivational approaches that cater to the unique needs and preferences of students based on sex, age, and academic specialization across educational institutions in Physical education classes.

2. STATEMENT OF THE PROBLEM

The effectiveness of learning among college students in China in the domain of physical education is shaped by how they perceive intrinsic and extrinsic motivation. The individual perception and balance of genuine interest and passion for physical activities (intrinsic motivation), combined with external factors like incentives or recognition (extrinsic motivation), significantly contribute to shaping how college students in China understand the influence of motivation on their educational outcomes within the context of physical education.

Specifically, it seeks to answer the following questions:

(1) What is the demographic profile of the college student respondents in terms of the following:

- 1) Sex
- 2) Age
- 3) Specialization

(2) What is the college student respondents' assessments on the following intrinsic motivation sources :

- 1) Sense of choice;
- 2) Sense of progress;
- 3) Sense of meaningfulness and
- 4) Sense of competence?

(3) Is there a significant difference in the assessment on the college student-respondents' intrinsic motivation sources when their demographic profile is taken as test factor?

(4) What is the college respondents' assessments on the following extrinsic motivation sources:

- 1) External rewards;
- 2) Social Approval;and
- 3) Competition?

(5) Is there a significant difference in the assessment on the college student-respondents' extrinsic motivation sources when their demographic profile is taken as test factor?

(6) What is the assessment of the college student-respondents on the following perception based learning effectiveness?

- 1) Autonomy supportive environment;and
- 2) Mastery oriented feedback

(7) Is there a significant relationship between the college student-respondents assessment of intrinsic and extrinsic sources of motivation on their learning effectiveness?

(8) Based on the research results, what enhanced program for Physical Education can be developed?

3. HYPOTHESES

This study tested the following hypotheses at a 0.05 level of significance.

Ho1. There is no significant difference in the assessment on the college student-respondents' intrinsic motivation sources when their demographic profile is taken as test factor

Ho2. There is no significant difference in the assessment on the college student-respondents' extrinsic motivation sources when their demographic profile is taken as test factor.

Ho3. There is no significant relationship between the college student-respondents assessment of intrinsic and extrinsic sources of motivation on their learning effectiveness.

4. RESEARCH DESIGN

This study is designed as a descriptive survey study. The purpose of descriptive research is to provide a detailed, accurate, and systematic portrayal or summary of a particular phenomenon, situation, or subject. This type of research aims to answer questions about the current state of affairs, characteristics of a group, or the prevalence of a phenomenon.

By definition, descriptive research is non-experimental research used to describe and interpret the current status of individuals, settings, conditions, or events, while the researcher is studying the phenomenon of interests as it exists naturally with no attempt to manipulate any of the variables. And the cross-sectional survey is helpful to examine the possible differences of characteristics among several samples or population measured at one point in time (Mertler, 2016).

5. RESULTS AND DISCUSSION

This chapter contains a tabular representation of the data collected, as well as its analysis and interpretation. The conclusions in this section are based on a statistical analysis performed with SPSS version 27.

Table 1. Profile of the Respondents

Profile		Frequency	Percent
Sex	Male	48	13.10%
	Female	318	86.90%
	Total	366	100%
Age	0-17	23	6.30
	18-25	318	86.90
	26-30	25	6.80
	Total	366	100%
Specialization	E-sports	161	44.00
	Social sports	205	56.00
	Total	366	100%

Presented in the table are the profile of the respondents as to sex, age, and specialization. As to sex, majority are females with 318 or 86.90%. As to age, majority belong to the age group 18-25 with 318 or 86.90%. As to specialization, majority are into social sports with 205 or 56.00%. This implies that there respondents are diverse and that they come from a varied point of view with regards to the thesis of the study.

Table 2. General Perspectives of the Respondents on their Intrinsic Motivation along Sense of Choice

Sense of Choice	Mean	SD	Description	Interpretation	Rank
Delegated authority in PE classes empowers students with the right to make decisions about their activities and fitness goals.	1.63	.515	Disagree	Moderately effective	1
Building trust in PE education involves having confidence in students' ability to self-manage their physical activities and well-being.	1.52	.522	Disagree	Moderately effective	4
Creating a secure environment in PE classes ensures that students do not fear punishment for honest mistakes, fostering a positive and meaningful learning experience.	1.52	.522	Disagree	Moderately effective	4
Specific fitness goals or skill development objectives, enhances the sense of meaningfulness in class.	1.50	.517	Strongly disagree	Not effective	7
Providing students with access to relevant information about physical health and fitness enhances the intrinsic motivation to engage in PE activities	1.54	.531	Disagree	Moderately effective	2
Allowing students to set personal goals in PE classes contributes towards individual achievements.	1.52	.537	Disagree	Moderately effective	4
Offering a variety of activities and allowing students to choose activities aligns with their interests, promoting engagement in PE class	1.51	.522	Disagree	Moderately effective	6
Composite Mean	1.54	.451	Disagree	Moderately effective	

Legend: 1.00-1:50 (Strongly disagree: Not effective); 1.51-2.50 (Disagree: Moderately effective); 2.51-3.50 (Agree; Effective); 3.51-4.00 (Strongly agree; Highly effective).

Table 2 presents the general perspectives of the respondents on their intrinsic motivation along sense of choice. It shows that the grand mean of the respondents on their intrinsic motivation along sense of choice is 1.54 (SD=.451), described as disagree and interpreted as moderately effective. Indicator 1, which states that Delegated authority in PE classes empowers students with the right to make decisions about their activities and fitness goals is perceived with the highest mean, 1.63 (Disagree: Moderately effective). On the other hand, indicator 4, which states that Specific fitness goals or skill development objectives, enhances the sense of meaningfulness in class with the mean, 1.50 (Strongly disagree: Not effective) is perceived with the lowest mean. The SD of the seven indicators, which are less than 1, indicate that the scores in the data set are very close to the mean.

The results indicate that, on average, respondents disagreed moderately with the statement regarding intrinsic motivation along the sense of choice, suggesting a need for improvement in empowering students further in decision-making about their activities and fitness goals in physical education (PE)

classes. However, they perceive delegated authority positively, indicating that when students are given the right to make decisions, they feel more empowered and motivated (Ross, 2017; Cherry, 2023). Conversely, setting specific fitness goals or skill development objectives was perceived as not effective in enhancing the meaningfulness of PE classes. This suggests a need to revisit how such goals are set and communicated to align them better with students' intrinsic motivation and sense of autonomy.

The foregoing results diverge with the the findings of Cherry (2023). It was concluded in the study that motivation compels individuals to engage in actions that bring them closer to their desired objectives. In the current study, sense of choice is seen in a lesser degree (moderately effective) while an optimized degree in the aforementioned study. It was further concluded that motivation encompasses spectrum of influences, including biological, emotional, social, and cognitive factors, which activate human behavior.

Table 3. General Perspectives of the Respondents on their Intrinsic Motivation along Sense of Progress

Sense of Progress	Mean	SD	Description	Interpretation	Rank
A collaborative climate in PE classes significantly contributes to a sense of progress in physical activities.	1.57	.513	Disagree	Moderately effective	1
Establishing milestones in PE education provides clear reference points to mark stages of accomplishment, facilitating a tangible sense of progress	1.55	.514	Disagree	Moderately effective	4.5
Celebrating achievements and milestones in PE classes creates enjoyable occasions that reinforce the sense of progress and accomplishment.	1.55	.520	Disagree	Moderately effective	4.5
Allowing students to interact provides a real-world context, emphasizing the progress and impact of their efforts.	1.56	.524	Disagree	Moderately effective	2.5
Implementing a measurement system for improvement in PE education offers students a clear way to assess their performance and perceive their progress.	1.54	.526	Disagree	Moderately effective	6.5
Enabling students to set personalized goals in PE classes enhances the sense of progress as they work towards individual achievements.	1.54	.510	Disagree	Moderately effective	6.5
Providing regular feedback and opportunities for reflection in PE classes helps students recognize and appreciate their progress	1.56	.524	Disagree	Moderately effective	2.5
Composite Mean	1.55	.460	Disagree	Moderately effective	

Legend: 1.00-1:50 (Strongly disagree: Not effective); 1.51-2.50 (Disagree: Moderately effective); 2.51-3.50 (Agree; Effective); 3.51-4.00 (Strongly agree; Highly effective).

Table 3 presents the general perspectives of the respondents on their intrinsic motivation along sense of progress. It shows that the grand mean of the respondents on their intrinsic motivation along sense of progress is 1.55 (SD=.460), described as disagree and interpreted as moderately effective. Indicator 1, which states that A collaborative climate in PE classes significantly contributes to a sense of

progress in physical activities is perceived with the highest mean, 1.57 (Disagree: Moderately effective). On the other hand, indicators 5 and 6, which states that Implementing a measurement system for improvement in PE education offers students a clear way to assess their performance and perceive their progress and Enabling students to set personalized goals in PE classes enhances the sense of progress as they work towards individual achievements, with means of 1.54 (Disagree: Moderately effective), is perceived with the lowest mean. The SD of the seven indicators, which are less than 1, indicate that the scores in the data set are very close to the mean.

These findings highlight potential challenges in measurement and goal-setting strategies within PE classes. Despite these variations, the consistency in scores across the indicators indicates a general alignment in students' perceptions of progress, autonomy, and competence in their PE classes. Thus, there is an opportunity to improve strategies for fostering a sense of progress in PE classes, potentially through refining measurement systems and goal-setting processes to better align with students' intrinsic motivation and sense of progress (Steinmayr et al., 2019; Badubi, 2017).

Table 4. General Perspectives of the Respondents on their Intrinsic Motivation along Sense of Meaningfulness

Sense of Meaningfulness	Mean	SD	Description	Interpretation	Rank
In a non-cynical PE education class, there is a freedom for students to care deeply about physical activity and well-being.	1.60	.539	Disagree	Moderately effective	1
Identifying individual passions in PE classes enhances the meaningfulness of physical activities and promotes a lifelong interest in health and fitness.	1.56	.524	Disagree	Moderately effective	5
Achieving personal fitness goals or mastering new skills, motivates students by providing a vivid picture of what can be accomplished.	1.55	.620	Disagree	Moderately effective	6
Establishing a connection between daily tasks in PE classes and broader health and well-being goals enhances the sense of meaningfulness.	1.57	.528	Disagree	Moderately effective	3.5
Allowing students to take responsibility for whole tasks, fosters a deeper connection and sense of accomplishment.	1.58	.561	Disagree	Moderately effective	2
Recognizing and acknowledging students' efforts in PE class contributes to their sense of meaningfulness.	1.57	.517	Disagree	Moderately effective	3.5
Integrating personal interests into PE activities aligns with students' passions, fostering a sense of meaning and relevance in physical education.	1.54	.526	Disagree	Moderately effective	7
Composite Mean	1.57	.454	Disagree	Moderately effective	

Legend: 1.00-1:50 (Strongly disagree: Not effective); 1.51-2.50 (Disagree: Moderately effective); 2.51-3.50 (Agree; Effective); 3.51-4.00 (Strongly agree; Highly effective).

Table 4 presents the general perspectives of the respondents on their intrinsic motivation along sense of meaningfulness. It shows that the grand mean of the respondents on their intrinsic motivation along sense of meaningfulness is 1.57 (SD=.454), described as disagree and interpreted as moderately effective.

The results indicate that, on average, respondents disagreed moderately with the statement regarding intrinsic motivation along the sense of meaningfulness in physical education (PE) classes. This suggests a need for improvement in enhancing students' sense of meaningfulness further. A non-cynical environment in PE classes, where students have the freedom to care deeply about physical activity and well-being, was perceived as important and received the highest mean score of 1.60. However, integrating personal interests into PE activities to align with students' passions and foster a sense of meaning and relevance was perceived as moderately effective, with the lowest mean score of 1.54.

These findings suggest that while students value a non-cynical environment, there may be challenges in integrating personal interests effectively into PE activities to enhance meaningfulness. Despite these challenges, the consistency in scores across the indicators indicates a general alignment in students' perceptions of meaningfulness, autonomy, and competence in their PE classes (Ross, 2017). Thus, there is an opportunity to enhance students' sense of meaningfulness in PE classes by further exploring strategies to integrate personal interests into the curriculum effectively (Steinmayr et al., 2019).

Table 5. General Perspectives of the Respondents on their Intrinsic Motivation along Sense of Competence

Sense of Competence	Mean	SD	Description	Interpretation	Rank
A sufficient store of insights from education and experience significantly contributes to a sense of competence in PE classes.	1.58	.515	Disagree	Moderately effective	4
Receiving positive feedback, which provides information on what is working well, enhances the sense of competence in physical activities.	1.57	.544	Disagree	Moderately effective	6.5
Acknowledging and receiving due credit for successes positively influences the sense of competence in PE education.	1.58	.526	Disagree	Moderately effective	4
Engaging in challenging tasks that align with individual abilities contributes significantly to a sense of competence.	1.60	.529	Disagree	Moderately effective	1
Having high, non-comparative standards that don't force rankings positively impacts the perception of competence in PE classes.	1.59	.514	Disagree	Moderately effective	2
Experiencing a variety of learning approaches in PE education caters to different abilities, fostering a sense of competence.	1.57	.528	Disagree	Moderately effective	6.5
Providing opportunities for students to track their individual progress in PE activities enhances the sense of competence and personal achievement.	1.58	.542	Disagree	Moderately effective	4
Composite Mean	1.58	.460	Disagree	Moderately effective	

Legend: 1.00-1:50 (Strongly disagree; Not effective); 1.51-2.50 (Disagree; Moderately effective); 2.51-3.50 (Agree; Effective); 3.51-4.00 (Strongly agree; Highly effective).

Table 5 presents the general perspectives of the respondents on their intrinsic motivation along sense of competence. It shows that the grand mean of the respondents on their intrinsic motivation along sense of competence is 1.58 (SD=.460), described as disagree and interpreted as moderately effective. Indicator 4, which states that Engaging in challenging tasks that align with individual abilities contributes significantly to a sense of competence, is perceived with the highest mean, 1.60 (Disagree: Moderately effective). On the other hand, indicators 2 and 6, which states that Receiving positive feedback, which provides information on what is working well, enhances the sense of competence in physical activities and Experiencing a variety of learning approaches in PE education caters to different abilities, fostering a sense of competence, with means of 1.57 (Disagree: Moderately effective), are perceived with the lowest mean. The SD of the seven indicators, which are less than 1, indicate that the scores in the data set are very close to the mean.

The results highlight potential challenges in how positive feedback is given and how learning approaches are designed within PE classes. Despite these variations, the consistency in scores across the indicators indicates a general alignment in students' perceptions of competence, autonomy, and related factors in their PE classes (Steinmayr et al., 2019). Thus, there is an opportunity to enhance students' sense of competence in PE classes by further exploring effective feedback mechanisms and designing learning approaches that cater to different abilities more effectively (Negro et al., 2019; Budd et al., 2021).

6. CONCLUSION

Based on the findings of the study, the following are concluded:

- (1) The profile of the respondents implies that they are diverse with a varied point of view with regards to the thesis of the study.
- (2) The consistent perception of intrinsic motivations as moderately effective underscores their pivotal role in driving student motivation in physical education, emphasizing the importance of factors such as choice, progress, meaningfulness, and competence.
- (3) The absence of significant differences based on sex, specialization, or age highlights the universal value placed on intrinsic motivators, indicating that these factors do not substantially influence how students perceive these motivators.
- (4) The moderate effectiveness attributed to extrinsic motivations suggests their relevance in motivating students, albeit to a lesser degree than intrinsic factors, indicating that factors like social approval, external reward, and competition play a role in student motivation.
- (5) The consistent perception of extrinsic motivators across demographics suggests a uniform understanding of their impact, indicating that factors like sex, specialization, or age do not significantly alter how these motivators are perceived.
- (6) The perceived effectiveness of learning factors such as autonomy, supportive environment, and mastery-oriented feedback highlights their importance in enhancing student learning experiences, suggesting that these factors are crucial for effective learning outcomes.
- (7) The significant relationships between intrinsic and extrinsic motivators with learning effectiveness indicate that motivated students perceive higher levels of learning effectiveness, emphasizing the integral connection between motivation and learning outcomes in physical education.

7. RECOMMENDATIONS

Based on the conclusions of the study, the following are recommended:

- (1) To enhance intrinsic motivation in physical education, educators should focus on providing students with meaningful choices, opportunities to track their progress, activities that are personally meaningful, and tasks that match their competence level. This can help increase students' engagement and motivation in the learning process.
- (2) While intrinsic motivators are universally valued, educators should still be mindful of individual differences and tailor motivational strategies to meet the specific needs and preferences of students, regardless of their sex, specialization, or age.
- (3) Although extrinsic motivators are perceived as less effective than intrinsic factors, they still play a role in motivating students. Educators can leverage social approval, external rewards, and healthy competition to complement intrinsic motivators and enhance student engagement.
- (4) Educators can confidently use extrinsic motivators across different demographic groups, knowing that these factors are generally perceived similarly. This allows for more universal application of motivational strategies in physical education.
- (5) To improve learning outcomes, educators may focus on providing students with opportunities for autonomy in decision-making, creating a supportive and encouraging learning environment, and offering feedback that emphasizes mastery and improvement.
- (6) Educators may recognize the strong connection between student motivation and learning outcomes. By fostering intrinsic and extrinsic motivation, educators may enhance students' perceived learning effectiveness, leading to improved academic performance and engagement in physical education.

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