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ORIGINAL

How can physical literacy provide confidence for beliefs in physical education teachers?

¿Cómo puede la alfabetización física brindar confianza en las creencias de los profesores de educación física?

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ABSTRACT

In the context of physical education, physical literacy is an important foundation for prospective teachers in forming professional attitudes and self-confidence in teaching abilities. Physical literacy includes an individual's understanding, ability, and motivation to engage in active physical activity throughout life. This study aims to analyze the effect of physical literacy on the beliefs of prospective physical education teachers, and to test the significance of the relationship between the two variables. This study uses a quantitative approach with a correlational design. The sample consists of prospective physical education teachers at the higher education level. The data collection instruments are in the form of a physical literacy questionnaire and a validated self-confidence scale. Data analysis was carried out using normality and correlation tests. The normality test using Kolmogorov-Smirnov showed a significance value of 0,236, which means that the data is normally distributed. Furthermore, the Spearman correlation test showed a coefficient of 0,416, indicating a fairly strong positive relationship between physical literacy and the beliefs of prospective physical education teachers. These results indicate that the higher the physical literacy, the higher the level of confidence possessed by prospective teachers. Physical literacy has a significant influence on the self-confidence of prospective physical education teachers. Therefore, strengthening physical literacy needs to be a focus in the teacher education curriculum so that they have optimal mental readiness and skills to teach.

Keywords: Physical Literacy; Self-Efficacy; Prospective Teachers; Physical Education; Quality Education.

RESUMEN

En el contexto de la educación física, la alfabetización física es una base importante para que los futuros profesores desarrollen actitudes profesionales y autoconfianza en sus habilidades docentes. La alfabetización física incluye la comprensión, la capacidad y la motivación de una persona para participar en actividades físicas activas a lo largo de su vida. Este estudio busca analizar el efecto de la alfabetización física en las creencias de los futuros profesores de educación física y evaluar la significancia de la relación entre ambas variables. Este estudio utiliza un enfoque cuantitativo con un diseño correlacional. La muestra está compuesta por futuros profesores de educación física de nivel superior. Los instrumentos de recolección de datos consisten en un cuestionario de alfabetización física y una escala de autoconfianza validada. El análisis de datos se realizó mediante pruebas de normalidad y correlación. La prueba de normalidad, con la prueba de Kolmogorov-Smirnov, mostró un valor de significancia de 0,236, lo que indica una distribución normal de

los datos. Además, la prueba de correlación de Spearman mostró un coeficiente de 0,416, lo que indica una relación positiva bastante fuerte entre la alfabetización física y las creencias de los futuros profesores de educación física. Estos resultados indican que, a mayor alfabetización física, mayor confianza en sí mismos de los futuros docentes. La alfabetización física influye significativamente en la autoconfianza de los futuros docentes de educación física. Por lo tanto, el fortalecimiento de la alfabetización física debe ser un enfoque prioritario en el currículo de formación docente para que cuenten con una preparación mental óptima y las habilidades necesarias para la enseñanza.

Palabras clave: Alfabetización Física; Autoeficacia; Futuros Docentes; Educación Física; Educación de Calidad.

INTRODUCTION

Physical literacy, a concept gaining prominence in educational and health sectors, encompasses the motivation, confidence, physical competence, knowledge, and understanding required to maintain physical activity throughout life.[1] It extends beyond mere physical skills, incorporating attitudes and knowledge that influence participation in physical activities.[2,3] Exploring the intricate relationship between physical literacy skills and teacher confidence reveals a multifaceted dynamic, where one's proficiency in physical activities and understanding of movement principles can significantly impact their self-assurance in teaching and promoting physical education.[1] This interplay is particularly relevant in primary and secondary education, where teachers often serve as the primary facilitators of physical activity and movement education.[4] The importance of this relationship is further amplified by the increasing recognition of physical literacy as a cornerstone of lifelong health and well-being.[4] Physical education presents an exciting opportunity for exploration and understanding the intricate relationship between skill-based practices and student outcomes.[5]

Teacher confidence, in the context of physical education, refers to a teacher's belief in their ability to effectively plan, implement, and assess physical activity programs.[6] This confidence is not solely dependent on subject matter knowledge but also on pedagogical skills, classroom management techniques, and the ability to adapt instruction to diverse student needs. Teachers with high confidence levels are more likely to engage students, provide effective feedback, and create a positive learning environment that fosters physical literacy development. Conversely, teachers lacking confidence may avoid teaching physical education or rely on traditional, less engaging methods, potentially hindering students' physical literacy acquisition. It can be described as a disposition acquired by human individuals encompassing the motivation, confidence, and physical competence that establishes purposeful physical activity as an integral part of their lifestyle.[7] Therefore, any intervention adopted to promote physical literacy should consider the factors that enhance learners' motivation and confidence.[1] Furthermore, a teacher's understanding of the curriculum and teaching methods is essential to develop students' core literacy.[8] The multifaceted nature of physical literacy necessitates a comprehensive understanding of its various components and how they interact to influence teacher confidence and effectiveness in promoting physical activity among students.[6]

The theoretical framework underpinning this exploration draws from self-efficacy theory, which posits that an individual's belief in their ability to succeed in specific situations or accomplish a task directly influences their behavior and motivation. In the context of physical education, a teacher's self-efficacy in teaching physical skills and promoting physical activity is likely to be influenced by their own level of physical literacy. Teachers who are physically literate themselves are better equipped to understand the challenges and opportunities associated with physical activity, allowing them to provide more effective instruction and support to their students. Furthermore, the concept of pedagogical content knowledge is relevant, highlighting the importance of teachers' understanding of how to effectively teach specific subject matter.

The theoretical underpinnings of this investigation draw from several key areas, including self-efficacy theory, which posits that an individual's belief in their ability to succeed in specific situations directly influences their behavior and motivation.[9] Bandura's work highlights the central role of self-belief in determining whether individuals pursue challenging tasks, persevere through difficulties, and ultimately achieve their goals. Within the context of physical literacy, a teacher's self-efficacy in their own physical abilities and their capacity to teach movement skills can significantly impact their approach to physical education. Additionally, the concept of pedagogical content knowledge emphasizes the importance of teachers' understanding of how to effectively teach specific subject matter. Teachers need to deliver effective instruction linked to the affective dimension of development, nurturing students' self-efficacy while bolstering their reading skills.[10] A teacher with strong pedagogical content knowledge in physical education can better translate their understanding of movement principles into engaging and effective lessons, thereby increasing their confidence in the classroom. Moreover, ecological systems theory provides a framework for understanding how various environmental factors, such as school policies, available resources, and community support, can influence both teacher confidence and

the implementation of physical literacy programs. A supportive school environment, aligned with national initiatives, is crucial for teachers to overcome barriers and effectively promote physical literacy.[11] Self-determination theory emphasizes the importance of intrinsic motivation in sustaining engagement in physical activity.[12,13]

Existing literature provides insights into the various factors that influence teacher confidence in physical education settings. Studies have shown that teachers' prior experiences, both positive and negative, with physical activity can significantly shape their attitudes towards teaching physical education. Teachers' self-efficacy, or their confidence in their ability to successfully manage the responsibilities, demands, and problems associated with their professional activity, has a significant impact on teaching.[14] Furthermore, research suggests that teachers who possess a higher level of physical literacy themselves are more likely to feel confident in their ability to teach movement skills and promote physical activity among their students. Teacher preparation programs play a crucial role in equipping teachers with the necessary knowledge and skills to effectively teach physical education. Studies reveal that teachers' participation in standards-based performance assessments can help teachers improve their practice.[15] However, the effectiveness of these programs can vary, and some teachers may feel inadequately prepared to address the diverse needs of their students in physical education settings. The interpersonal behavior of physical education teachers can significantly influence students, highlighting the importance of creating a positive and motivating classroom climate.[16]

Thus, a thorough understanding of physical literacy and self-efficacy of prospective physical education teachers is crucial for improving the quality of physical education teaching. Therefore, the purpose of this study was to analyze the influence of physical literacy on prospective physical education teachers' self-efficacy and to test the significance of the relationship between the two variables.

METHOD

Study Design

This study uses a quantitative approach to measure the relationship between two main variables: physical literacy and teachers' beliefs in physical education. The design used is a correlational survey, which aims to determine whether there is a relationship between the level of physical literacy possessed by teachers and the extent to which they believe in the importance of physical education. Data collection was carried out through questionnaires distributed to physical education teachers in various schools, with a focus on gaining an in-depth understanding of the influence of physical literacy on teachers' beliefs without repeating the explanation of the research objectives mentioned in the introduction.

Respondents

The respondents in this study consist of physical education teachers teaching at the primary and secondary education levels. The sample of respondents is selected through random sampling, with specific criteria, such as having at least two years of teaching experience in physical education. A total of 362 physical education teachers participates in this study. The selection of respondents with sufficient teaching experience is intended to provide representative results regarding the relationship between physical literacy and teachers' beliefs in physical education.

Instruments

The instrument used in this study was a questionnaire consisting of two main parts: the first part to measure the level of physical literacy,[9] with the results of exploratory factor analysis (EFA) showing item loadings ranging from 0,69 to 0,87, and Cronbach's alpha values between 0,73 to 0,76, as well as confirmatory factor analysis (CFA); while the second part to measure teachers' beliefs about physical education.[17] This teacher beliefs section has been adapted by the researcher to suit the conditions and sports backgrounds of the respondents. Reanalysis of 28 items showed that all items were valid, with significance values ranging from 0,190 to 0,641. Reliability tests showed inter-item values ranging from 0,693 to 0,732, with a Cronbach's Alpha value of 0,717, indicating that this instrument has good internal consistency. The questionnaire used has undergone validity and reliability tests to ensure that this instrument can measure both variables accurately. To measure physical literacy, the questionnaire focused on teachers' knowledge, skills, and attitudes toward physical education. Meanwhile, to measure teacher beliefs, the questions focused more on their beliefs about the importance of physical education in student development.

Data Analysis

After data collection, analysis was performed using SPSS. The first step was to conduct a normality test to ensure that the collected data met the assumption of a normal distribution, which is a prerequisite for further statistical analysis. The results of the Kolmogorov-Smirnov test indicated that the tested data did not differ significantly from a normal distribution. The p-values generated in this test were 0,200 in the Asymptotic test

and 0,236 in the Monte Carlo test. Both values were greater than 0,05, indicating insufficient evidence to reject the null hypothesis that the data followed a normal distribution. Therefore, the null hypothesis was accepted, indicating that the data were normally distributed.

Furthermore, the 99% confidence interval also showed a significance value between 0,225 and 0,247, which is still greater than 0,05. This further strengthens the conclusion that the tested data were indeed normally distributed. After confirming the data were normally distributed, the next analysis was to test for correlation using the Spearman's rho test to measure the strength and direction of the relationship between physical literacy and teachers' beliefs in physical education.

RESULTS

After the data is declared normal through a normality test, the next step is to conduct a correlation analysis to measure the relationship between the two variables being studied. The positive correlation found will indicate that the higher the level of physical literacy of teachers, the greater their confidence in the importance of physical education. The correlation results between Physical Literacy and Teachers' Beliefs show a moderate positive relationship with a correlation coefficient of 0,416. This means that the higher the level of physical literacy, the higher the teacher's belief in the importance of physical literacy in education. This correlation value indicates a significant relationship, which is strong enough to show that teachers' understanding of physical literacy is directly related to their beliefs in teaching and promoting physical literacy. A p-value smaller than 0,001 confirms that this correlation is highly statistically significant at the 0,01 level (2-tailed), indicating that the relationship found is not coincidental and can be relied upon for generalization to a wider population. Based on the calculation results can be seen in table 2 below.

Table 1. Correlations Test Results

			Physical Literacy	Beliefs Teachers
Spearman's rho	Physical Literacy	Correlation Coefficient	1,000	,416**
		Sig. (2-tailed)	.	<,001
		N	362	362
	Beliefs Teachers	Correlation Coefficient	,416**	1,000
		Sig. (2-tailed)	<,001	.
		N	362	362

Note: **. Correlation is significant at the 0,01 level (2-tailed).

This positive correlation also shows that if teachers have a better understanding of the importance of physical literacy, then they tend to have stronger beliefs in teaching the material to students. Practically, these findings can be used as a basis for designing training programs for teachers aimed at improving their knowledge of physical literacy, which can ultimately have an impact on improving the quality of physical education in schools.

DISCUSSION

Physical literacy, encompassing the motivation, confidence, physical competence, knowledge, and understanding to maintain physical activity throughout life, plays a crucial role in shaping the beliefs and practices of physical education teachers.[2] Physical literacy extends beyond mere physical skills, incorporating attitudes and motivation that significantly influence participation in physical activities, potentially preventing chronic diseases in adulthood and fostering sustained engagement in physical activity.[3] The development of physical literacy is as vital as literacy and numeracy, prompting global interest in its cultivation.[1] Regular exposure to structured physical activity with qualified instruction is essential for enhancing physical literacy and facilitating participation in exercise and sport activities with interest and enthusiasm.[4] Physical education should integrate movement vocabulary, physical literacy, and athletic movement skills to foster athleticism, preparing students for a lifetime of healthy living through comprehensive physical training.[7]

The relationship between physical literacy and the beliefs of physical education teachers is multifaceted, influenced by various factors, including the teachers' own experiences, education, and professional development.[4,18] The importance of physical literacy lies in its ability to promote a physically active lifestyle by developing motor skills, enhancing fitness, imparting relevant knowledge, and addressing the affective goals of the program.[19] Physical education serves as a key tool in developing physical literacy and reversing global trends of physical inactivity through diverse approaches.[20] Incorporating physical literacy into physical education curricula necessitates a shift towards student-centered learning, where educators prioritize creating

engaging experiences that foster intrinsic motivation and a lifelong commitment to physical activity.[5,21] It is observed that physical literacy can be understood as a unified activity in physical education teachers' teaching and students' learning.[8]

Furthermore, teachers who possess a strong foundation in physical literacy are more likely to hold positive beliefs about the value of physical education and its impact on students' overall well-being. These teachers are better equipped to create inclusive and engaging learning environments that cater to diverse student needs, fostering a positive attitude towards physical activity. Interventions designed around physical literacy concepts can potentially impact physical activity levels and contribute to improved health indicators, as evidenced by studies showing associations between physical literacy and aerobic fitness.[22] Moreover, teachers' beliefs about physical literacy can influence their pedagogical approaches, instructional strategies, and assessment methods, impacting the overall quality of physical education programs. Physical literacy provides a framework for understanding how foundational attributes for physical activity link to psychological and social factors related to resilience, suggesting that physical literacy development in schools can support the well-being of young people and their future health.[1,23]

Considering the positive correlation between physical literacy and the beliefs of prospective physical education teachers, it is crucial to invest in comprehensive teacher training programs that prioritize the development of physical literacy skills and knowledge. These programs should equip teachers with the necessary tools and strategies to effectively promote physical literacy among their students, including the ability to assess physical literacy levels and design appropriate interventions. Given global health risks and unhealthy lifestyles, a physically active and literate population is more critical than ever.[24] This necessitates clear definitions, appropriate assessment tools, and effective interventions to promote physical literacy at an individual level.[25] Moreover, schools and communities should work together to create supportive environments that encourage physical activity and provide opportunities for students to practice and develop their physical literacy skills.[2]

The concept of physical literacy has expanded beyond physical education, now being implemented throughout curricula to enhance student learning. Physical literacy emphasizes inclusive activities that move away from traditional notions of physical competence, size, shape, appearance, and ability, focusing instead on how all bodies can develop fundamental movement skills, functional fitness, and physical literacy.[26] Despite the growing recognition of physical literacy, many teachers, both specialists and generalists, demonstrate a limited understanding of the concept, highlighting the need for enhanced support in understanding and developing physical literacy through physical education classes.[27] In order to nurture a positive and motivating environment in physical education, children should encounter tasks that inspire them to embody competence and self-regulation strategies, fostering the motivation to move.[12]

Although this study successfully demonstrated a significant positive relationship between physical literacy and physical education teachers' beliefs, there are several limitations that need to be considered. First, the sample used in this study was limited to physical education teachers in a small number of schools, so the results may not be fully generalizable to the wider population. Second, the measurement of physical literacy and teachers' beliefs used a questionnaire instrument that relied on self-perception, which could be affected by respondents' subjective bias. Third, this study used a cross-sectional design, which only allows for identifying relationships between variables without being able to draw conclusions about cause and effect. Therefore, further research with longitudinal or experimental designs involving more diverse samples and the use of more objective measurement instruments is needed to strengthen these findings and provide deeper insights into the influence of physical literacy on teachers' beliefs and teaching practices.

CONCLUSIONS

The need of the hour is to recognize that physical education is important for students which can assist them in keep their bodies in shape. Participation in physical activities are vital for mental and physical well-being of students. It is necessary for educational institutions and researchers to carefully verify which teaching methodologies and approaches are particularly effective in promoting participation in physical and sports activities from an inclusive perspective. In summary, physical literacy plays a pivotal role in shaping the beliefs and confidence of physical education teachers, influencing their teaching practices and ultimately impacting the physical activity levels and overall well-being of students. Addressing physical literacy from a health perspective requires measurement tools to assess and deconstruct each of its components. By prioritizing the development of physical literacy skills and knowledge among teachers and students, we can create a more physically active and healthy society.

REFERENCES

1. Jefferies P, Ungar M, Aubertin P, Kriellaars D. Physical literacy and resilience in children and youth. Front Public Health. 2019 Nov 19;7:.

2. Castelli DM, Centeio EE, Beighle AE, Carson RL, Nicksic HM. Physical literacy and comprehensive school physical activity programs. Prev Med (Baltim). 2014 Sep;66:95–100.

3. Öztürk Ö, Aydoğdu O, Kutlutürk Yıkılmaz S, Feyzioğlu Ö, Pişirici P. Physical literacy as a determinant of physical activity level among late adolescents. PLoS One. 2023 Apr 28;18(4):e0285032.

4. Faigenbaum AD, Rebullido TR. Understanding physical literacy in youth. Strength Cond J. 2018;40(6):90–4.

5. He J, Yu H, Jiang M, Bialas M. A research synthesis on successful educational practices and student outcomes for physical education in schools. Front Psychol. 2023 Oct 2;14:.

6. Yelling M, Penney D. Physical activity in physical education: pupil activity rating, reason and reality. Eur J Phys Educ. 2003 Jan 10;8(2):119–40.

7. Kumar R. Physical education is the basic foundation to build high performance athlete. In: Proceedings of the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1st Conference on Interdisciplinary Approach in Sports (CoIS 2018). Paris: Atlantis Press; 2018.

8. Qi S. Research on the teaching integration of physical education core literacy. DEStech Trans Soc Sci Educ Hum Sci. 2020 Sep 9;(ssme).

9. Sum RKW, Morgan K, Ma MM-S, Choi S-M. The influence of a customized continuing professional development programme on physical education teachers' perceived physical literacy and efficacy beliefs. Prospects. 2021 Feb 25;50(1–2):87–106.

10. Ortlieb E, Schatz S. Student's self-efficacy in reading – connecting theory to practice. Read Psychol. 2020 Oct 2;41(7):735–51.

11. Castelli DM, Barcelona JM, Bryant L. Contextualizing physical literacy in the school environment: the challenges. J Sport Health Sci. 2015 Jun;4(2):156–63.

12. Chen A. Operationalizing physical literacy for learners: embodying the motivation to move. J Sport Health Sci. 2015 Jun;4(2):125–31.

13. Marheni E, Purnomo E, Okilanda A, Oktavianus I, Hambali B, Burstiando R, et al. Development of mental education through sports to enhance adolescent personal resilience. J Hum Sport Exerc. 2023;19(2):536–49.

14. Orakcı Ş, Yüreğilli Göksu D, Karagöz S. A mixed-methods study of teachers' self-efficacy views and their ability to improve self-efficacy beliefs during teaching. Front Psychol. 2023 Jan 4;13:.

15. Stephani MR, Mahendra A, Suntoda A, Sumarno G, Friskawati GF. Teacher's perspective about teaching effectiveness barriers in elementary physical education: teachers self-evaluation. In: Proceedings of the 4th International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019). Paris: Atlantis Press; 2020.

16. Moreno-Murcia JA, Huéscar Hernández E, Ruiz L. Perceptions of controlling teaching behaviors and the effects on the motivation and behavior of high school physical education students. Int J Environ Res Public Health. 2018 Oct 18;15(10):2288.

17. Benjamin J. Revision and validation of the Revised Teacher Beliefs Survey. In: Annual Meeting of the American Educational Research Association. Chicago; 2003. p. 18.

18. Marheni E, Purnomo E, Jermaina N, Afrizal S, Sitompul SR, Suardika IK, et al. Discipline levels of junior students during physical education lessons at schools. Int J Hum Mov Sport Sci. 2021;9(4):635–41.

19. Rink JE, Hall TJ. Research on effective teaching in elementary school physical education. Elem Sch J. 2008 Jan;108(3):207–18.

20. Henrique RSF. Physical literacy for life: the facts, the trends, and the effects. Glob J Obesity Diabetes

Metab Syndr. 2020 Apr 13;7(2):9–11.

21. Hafiar H, Budiana HR, Mirawati I, Abdullah KH, Purnomo E. Conceptual structure analysis with Bibliometrix package in R: a scientific communication of sport education. Retos. 2024;51:1245–54.

22. Caldwell HAT, Di Cristofaro NA, Cairney J, Bray SR, MacDonald MJ, Timmons BW. Physical literacy, physical activity, and health indicators in school-age children. Int J Environ Res Public Health. 2020 Jul 25;17(15):5367.

23. Purnomo E, Ma'mun A, Winarno ME, Mardesia P, Jermaina N, Abidin NEZ. Reliability and interrater agreement: development and validation of a universal values in sport instrument. Retos. 2024;57:664–83.

24. Panganiban TDC. Quality assessment of physical education program of state universities in the Philippines. J Sport J Penelit Pembelajaran. 2019 Jun 29;5(2):166.

25. Kadi ER. Critical ethnomusicology pedagogy with migrant youth in Edmonton, Canada: promoting cultural empowerment and intercultural learning through music. Edmonton: University of Alberta; 2017.

26. Barber W. Inclusive and accessible physical education: rethinking ability and disability in pre-service teacher education. Sport Educ Soc. 2018 Jul 24;23(6):520–32.

27. Stoddart AL, Humbert ML. Teachers' perceptions of physical literacy. Curric J. 2021 Nov 7;32(4):741–57.

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CONFLICT OF INTEREST

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