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Linking Pre-Service Teacher Fitness and Clarity of Instruction to Student Skill Acquisition in Physical Education Class

(Perkaitan Kecergasan dan Kejelasan Arahan Guru Pra Perkhidmatan dengan Pemerolehan Kemahiran Murid dalam Kelas Pendidikan Jasmani)

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ABSTRACT

The objective of this research is to investigate the relationships between pre-service physical education (PE) teachers' fitness, their clarity of instruction, and the skill acquisition of secondary school students in PE classes. The sample consists of 653 secondary school students aged 15-18 years from multiple schools across different districts in one of the states of Malaysia. Pre-service PE teachers involved were 60 students of a faculty of education from one of the Malaysian Public Universities. The instruments are self-administered questionnaires: 1. PE Teacher Fitness Questionnaire (TFQ), 2. Clarity of Instruction in PE Scale (CIPS), 3. Student Skill Acquisition Scale (SSAS). The scales Cronbach's alpha values are between 0.812 and 0.893. Descriptive statistics and Pearson's correlation analyses were performed using SPSS version 29. The results indicated. There were strong positive correlations between the pre-service PE teachers' fitness (r = 0.872), clarity of instruction (r = 0.949), and the student's skill acquisition in PE classes. These findings underscore the importance of incorporating comprehensive fitness and effective communication training into pre-service PE teacher education programs. Also, suggested avenues for further research and policy development aimed at optimising educational outcomes in physical education settings.

Keywords: Pre-service teacher, fitness, clarity of instruction, skill acquisition, physical education, student

ABSTRAK

Objektif penyelidikan ini adalah untuk menyiasat hubungan antara kecergasan guru pendidikan jasmani (PJ) pra perkhidmatan, kejelasan pengajaran mereka, dan pemerolehan kemahiran pelajar sekolah menengah dalam kelas PJ. Sampel terdiri daripada 653 pelajar sekolah menengah berumur 15-18 tahun dari pelbagai sekolah merentasi daerah yang berbeza di salah sebuah negeri di Malaysia. Guru PJ pra perkhidmatan yang terlibat adalah 60 orang pelajar fakulti pendidikan dari salah sebuah Universiti Awam Malaysia. Instrumen tersebut adalah soal selidik yang ditadbir sendiri: 1. Soal Selidik Kecergasan Guru PJ (TFQ), 2. Kejelasan Pengajaran dalam Skala PJ (CIPS), 3. Skala Pemerolehan Kemahiran Murid (SSAS). Skala nilai alfa Cronbach adalah antara 0.812 dan 0.893. Statistik deskriptif dan analisis korelasi Pearson telah dilakukan menggunakan SPSS versi 29. Keputusan menunjukkan bahawa terdapat korelasi positif yang kukuh antara kecergasan guru PJ pra perkhidmatan (r = 0.872) dan kejelasan pengajaran (r = 0.949) dengan pemerolehan kemahiran pelajar dalam kelas PJ. Penemuan ini menggariskan kepentingan untuk menggabungkan kecergasan komprehensif dan latihan komunikasi yang berkesan ke dalam program pendidikan guru PJ pra perkhidmatan. Juga dicadangkan untuk penyelidikan lanjut dan pembangunan dasar yang bertujuan untuk mengoptimumkan hasil pendidikan dalam tetapan pendidikan jasmani.

Kata kunci: Guru pra perkhidmatan, kecergasan, kejelasan pengajaran, pemerolehan kemahiran, pendidikan jasmani, pelajar

INTRODUCTION

One of the most important components of pre-service teacher (PST) education programs is practical field experience. Many studies reported that PSTs evaluate their practicum as one of the most important components of their initial teacher education (Clarke et al., 2014). During their first practical teaching experiences in schools, however, PSTs may encounter different challenges (Poulou 2007) that can affect their attainment of skills. In teacher education (TE), the PST can experience a clash between the teaching philosophies and teaching methods advocated in university-based courses and those they encounter during field-based learning courses (Tolgfors et al. 2021). A perceived gap between these contexts often results in PSTs valuing the practical knowledge learned in the school setting and not seeing the point of the theoretical perspectives they learned in lectures at university (Standal et al. 2014; Velija et al. 2008). Traditionally, the focus has been on the question of how practice can be better linked to theory in TE, but a major problem that has been highlighted in attempts to promote innovative teaching is how to support PSTs in moving from understanding theory intellectually to enacting it in practice (Gotwalt 2023; Korthagen 2017).

PE PST, by definition, are individuals in the process of completing their education and training to become certified educators (Rink 2002). This lack of professional experience can lead to difficulties in implementing effective teaching strategies that are responsive to the varied learning needs of students. Experienced teachers typically have a repertoire of strategies developed through years of practice and reflection, which pre-service teachers are still in the process of acquiring. The novice nature of pre-service teachers can result in less effective skill transmission, as they may not yet have the nuanced understanding of how to adapt teaching methods to different learning styles or the specific needs of individual students.

Pedagogical content knowledge (PCK) refers to the understanding of how to teach specific content effectively. This includes knowing what makes the learning of specific content easy or difficult, the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning process, and the strategies that can be used to facilitate learning (Shulman 1987). Pre-service teachers are still developing this critical component of their professional knowledge. This developmental stage can result in a mismatch between the teaching methods employed and the actual educational needs of PE students, potentially hindering their skill acquisition (Araújo et al. 2019).

Effective classroom management is crucial for a productive learning environment, especially in physical education where safety and the coordination of physical activities are paramount. Pre-service teachers often struggle with classroom management because it requires confidence, assertiveness, and the ability to make quick decisions—qualities that are typically honed through experience. Without strong classroom management skills, the learning environment may become less safe or less focused, which can detract from skill acquisition (Graham et al. 2016).

Feedback is a critical component of learning motor skills. Experienced teachers are typically more adept at providing immediate, specific, and constructive feedback that can help students adjust their performances in real-time. Pre-service teachers, however, may struggle with this due to their limited experience and ongoing development in assessment skills. This can lead to delayed or inadequate feedback, which is less effective in helping students refine their motor skills (Rink 2002).

While pre-service PE teachers bring fresh enthusiasm and the latest theoretical knowledge to their roles, their lack of experience, developing pedagogical content knowledge, classroom management skills, and proficiency in providing effective feedback can pose challenges to student skill acquisition in physical education. However, these challenges also represent key areas of growth for pre-service teachers and highlight the importance of supportive mentorship and practical training during their formative years.

TEACHERS' CLARITY OF INSTRUCTION

Instructional clarity is one of the most important prerequisites for instructors to engage in teaching activities, and it is a critical component of effective teaching (Maulana & Helms-Lorenz 2016). Clarity of instruction entails providing clear learning goals and instructions (Danielson 2013; Metcalf 1992). In the U.S., providing clear instruction is also essential for PSTs because it is tested and evaluated at the end of initial teacher education (Pecheone & Chung 2006). Instructional clarity was defined as a teacher's ability to explain or otherwise assist students in thoroughly understanding the material (Metcalf 1992). Likewise, (Maulana & Helms-Lorenz 2016) defined instructional clarity as a teacher's capacity to deliver classroom instruction clearly and concisely. In line with this definition, instructional clarity in this study refers to teaching that is easy to understand in terms of clear responses to students' queries, linking new lessons to past knowledge, and attempting to integrate what is taught with students' daily experiences in mathematics class. In this

sense, instructional clarity in the current study also contains teachers' activation of students' thinking.

It is not easy for PSTs to provide clear instructions during the practicum even though they know that clear instruction can support students' learning (König et al. 2017). The practicum is a pivotal phase for pre-service teachers (PSTs) in which they acquire instructional skills and develop professionally (Smith & Lev-Ari 2005). Teachers who demonstrate good instructional support provide their students with consistent, process-oriented feedback; they focus on higher-order thinking skills and help their students to understand things in a meaningful context (Pianta et al. 2008). Instructional skills consist of basic skills like lesson planning and providing clear instructions (Danielson 2013; van de Grift 2007). Teachers' instructional practices and skills are associated with cognitive (i.e., professional knowledge) and affective-motivational components of teaching (Depaepe & König 2018). As teaching is complex and the attrition rate of novice teachers is high (Hong, 2010), PSTs need to be supported during their initial teacher education and especially during the teaching practicum (Darling-Hammond, Chung & Frelow 2002). The practicum can positively affect PSTs' feelings of preparedness to teach (Darling-Hammond et al. 2002) and their professional development (Zeichner 2002).

Clarity of instruction is a fundamental aspect of teaching effectiveness, particularly in physical education (PE), where the physical demonstration and verbal explanation of movements are critical. Effective instruction leads to better student understanding, engagement, and skill acquisition. The concept of instructional clarity can be linked to Cognitive Load Theory (Sweller 1988)., which posits that learners have a limited capacity for processing new information. Clarity in teaching helps minimise unnecessary cognitive load, allowing students to focus more effectively on learning the task at hand. The theoretical frameworks currently available for understanding instructional clarity in PE are often extensions of general education models and do not adequately address the specific challenges associated with physical skills training. These models typically overlook the kinetic and visual aspects of learning that are critical in PE.

TEACHERS PHYSICAL FITNESS

The physical fitness of Physical Education (PE) teachers is not merely a requirement for the effective demonstration of activities but a crucial element that influences their teaching effectiveness, student engagement, and the overall educational environment. The concept of PE teachers as role models is grounded in Bandura's Social Learning Theory (Bandura 1977), which suggests that students learn behaviors, skills, and attitudes through the observation of others. Physical fitness in PE teachers can exemplify the healthy behaviors they wish to instill in their students

Physical education teachers are expected to be paragons of health and fitness, as they play a pivotal role in modelling healthy lifestyle choices (Ha et al. 2013). The physical demands of the job require teachers not only to demonstrate various sports and activities but also to engage actively with students during these activities. A higher level of fitness allows pre-service teachers to perform these tasks more effectively, reducing the risk of fatigue and injury (Wright et al. 2005). Furthermore, physically fit teachers are more likely to exude confidence and enthusiasm, which can enhance student engagement and motivation.

Research has shown that teachers' physical fitness has a direct impact on their pedagogical performance. PE teachers with higher fitness levels were better able to engage students in physical activities, leading to higher student fitness scores (Keating & Silverman 2004). This correlation underscores the role of teacher fitness in the successful delivery of PE curriculum. Moreover, physically fit teachers are better able to demonstrate a wide range of movements accurately and safely, which is critical for teaching complex motor skills effectively (Placek et al. 2011).

Despite the importance of fitness, not all PE teacher education programs place sufficient emphasis on the physical fitness of their candidates. These programs need to incorporate rigorous physical fitness training as part of their curriculum to prepare candidates adequately for the physical demands of their future profession (Hardman et al. 2013). This includes not only traditional fitness training but also training in how to maintain personal fitness throughout a teaching career. Programs such as the Physical Activity Leader (PAL) training emphasize the development of skills and knowledge for personal health and fitness, along with effective teaching strategies (Stoepker et al. 2020).

The physical fitness of pre-service PE teachers is fundamental to their success and effectiveness in their future careers. As role models, their fitness levels can inspire and motivate students to lead active and healthy lives. Therefore, PE teacher education programs must prioritize fitness training to equip future teachers with the necessary skills and habits needed for both personal well-being and professional excellence.

STUDENT SKILL ACQUISITION

Effective teaching methods are fundamental to skill acquisition in physical education. These methods must be

varied and adaptable to cater to the diverse learning styles and abilities of students. For instance, direct instruction might be effective for teaching straightforward skills or rules, while cooperative learning could be more suitable for complex team sports or activities that require social interaction and strategic thinking (Jeong-ae 2002). Differentiated instruction, where tasks are tailored to meet the needs of students with varying skill levels, is also crucial in ensuring that all students are both challenged and supported in their learning process.

Student engagement is closely tied to motivation and is a key predictor of successful skill acquisition in PE. Motivation can be intrinsic, where students engage in physical activity for the joy and satisfaction it brings, or extrinsic, where external rewards or pressures drive participation. Teachers can foster intrinsic motivation by creating a learning environment that promotes fun and enjoyment through game-based learning and by providing choices that empower students to take ownership of their learning (Ryan & Deci 2000). Additionally, setting achievable goals and providing positive feedback can enhance both motivation and skill acquisition.

A well-structured PE curriculum that progressively builds on students' existing skills and introduces new skills in a sequential manner is essential for effective skill acquisition. The curriculum should encompass a variety of activities that cater to the development of motor skills, cognitive understanding, and affective skills, such as teamwork and sportsmanship. Importantly, the curriculum must also align with national or regional standards for physical education and should be flexible enough to adapt to the needs of individual students and the resources available (America et al. 2013).

Assessment in PE should go beyond merely evaluating student performance against standard benchmarks. It should include formative assessments that provide ongoing feedback, allowing teachers to modify instruction and support students in meeting their individual learning targets. Techniques such as peer assessment and self-reflection are also valuable, as they engage students actively in the learning process and help them to understand their own skill development trajectories (Siedentop & Van der Mars 2022).

Skill acquisition in physical education is a multifaceted process that requires effective teaching, motivated students, a thoughtfully designed curriculum, and robust assessment practices. By addressing these areas, educators can enhance the quality of physical education and help students develop the skills necessary for lifelong physical activity and health. The primary objective of this research is to investigate the relationships between pre-service physical education (PE) teachers' fitness, their clarity of instruction, and the skill acquisition of secondary school students aged 15-18 years in PE classes.

RESEARCH HYPOTHESES

Hypothesis 1 (H1): There is a significant positive correlation between pre-service PE teachers' fitness and students' skill acquisition in PE classes.

Hypothesis 2 (H2): There is a significant positive correlation between pre-service PE teachers' clarity of instruction and students' skill acquisition in PE classes.

METHODOLOGY

STUDY DESIGN

This study employs a cross-sectional quantitative design to assess the impacts of pre-service PE teachers' fitness and their clarity of instruction on student skill acquisition. The design facilitates the collection of data at a single point in time from a large sample, enabling statistical analysis of relationships between variables.

PARTICIPANTS

The sample consists of 653 secondary school students aged 15-18 years from multiple schools across different districts in one of the states of Malaysia. Pre-service PE teachers involved were 60 students of a faculty of education from one of the Malaysian Public Universities.

INSTRUMENTS

The instrument is a self-administered questionnaire specifically developed for this study, using a 5-point Likert scale (ranging from 1 - Strongly Disagree to 5 - Strongly Agree). The study employs three questionnaires:

1. PE Teacher Fitness Questionnaire (TFQ)

   This custom-designed instrument measures students' perceptions of their PE teachers' fitness. Items are rated on a Likert scale from 1 (strongly disagree) to 5 (Totally Agree) and cover aspects such as perceived endurance, strength, and overall physical condition.

2. Clarity of Instruction in PE Scale (CIPS)

   Developed for this study, this scale assesses the clarity of PE teachers' instructions as perceived by students. It includes items on a 5-point Likert scale from 1 (strongly disagree) to 5 (Totally Agree)

3. Student Skill Acquisition Scale (SSAS)

This scale measures the students' self-reported level of skill acquisition in PE, rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (Totally Agree).

To ensure validity and reliability, the questionnaire underwent a pilot test with a small group of students not included in the final study. Feedback from this pilot was used to refine the questions. Face validity was established through reviews by experts in PE pedagogy, and reliability was assessed using Cronbach's alpha after the pilot test.

DATA COLLECTION PROCEDURE

The researchers coordinated with Pre-service PE teachers at participating schools to ensure surveys were distributed after PE classes. Surveys were anonymous to maintain confidentiality and reduce bias. Pre-service PE teachers were informed of the study's purpose but were not present during the survey to avoid influencing students' responses.

DATA ANALYSIS

Data from the questionnaires were analysed using SPSS 29 software. Descriptive statistics provided a summary of the variables. Pearson's correlation coefficient was used to analyse the correlations between pre-service PE teachers' fitness and clarity of instruction, and student skill acquisition. Hypotheses were tested at a 0.05 significance level.

FINDING AND DISCUSSION

DEMOGRAPHIC

Based on Table 1, The data shows a slight female majority within the sample, accounting for 55.90% of the total participants, compared to 44.10% males. This gender distribution might influence the outcomes of the study, especially if the subject matter of the survey or study is sensitive to gender differences. The age distribution is fairly uniform across the four categories, with each age group representing approximately 25% of the total sample. This equitable distribution across the teenage years can provide a balanced insight into the developmental stages from mid to late adolescence.

The gender distribution points to a higher participation rate among females, which could be indicative of greater willingness or availability among female students to participate in studies, or it might reflect the actual gender ratio in the targeted population. The even distribution of ages ensures that the sample fairly represents high school students at different stages of adolescence, allowing for a comprehensive analysis of age-related trends.

Table 1. Demographic Data

Gender		Frequency	Percentage
	Male	288	44.10
	Female	365	55.90
Age			
	15	163	24.96
	16	158	24.20
	17	167	25.57
	18	165	25.27

n= 653

NORMALITY TEST

Table 2 shows the mean values that indicate the central tendency for each variable, with all three showing relatively high averages, suggesting generally positive perceptions or performances in these areas. The standard deviations are modest, indicating that responses are not widely dispersed around the mean, which suggests a relative consensus among the responses. All variables exhibit positive skewness, albeit mild (values between 0.230 and 0.433). Positive skewness indicates a distribution where more data points are concentrated on the left side of the distribution (lower scores), with a tail extending towards the higher scores. This could suggest that while the majority of responses are clustered around a high mean, there are fewer instances of exceptionally high scores.

The kurtosis values for all variables are positive but very close to zero, indicating only a slight departure from the kurtosis of a normal distribution. These values suggest that the distributions are slightly more peaked than a normal distribution, reflecting a higher concentration of scores around the mean, with fewer extreme outliers. Skewness and kurtosis values within ±2 is generally considered acceptable for satisfying the normality assumption necessary for parametric analyses (Kline 2023). The normality test results for Teacher Fitness, Teacher Clarity of Instruction, and Student Skill Acquisition indicate distributions that are generally well-centered and moderately tight but skewed towards higher scores with a more pronounced peak around the mean.

Table 2. Normality Test

	Mean	SD	Skewness	Kurtosis
Teacher Fitness	3.85	.43	.433	.353
Teacher Clarity of Instruction	4.12	.56	.321	.376
Student Skill Acquisition	4.13	.52	.230	.272

INSTRUMENT RELIABILITY TEST

Table 3 shows pre-service Teacher Fitness (0.893) is a very high alpha value indicates excellent internal consistency among the items used to measure the construct of pre-service Teacher Fitness. This suggests that the scale reliably assesses various aspects of fitness relevant to teachers, such as physical endurance, strength, and agility, ensuring that the tool effectively captures the intended dimensions of teacher fitness. Pre-service teacher clarity of instruction (0.871) is this strong alpha value reveals that the items measuring pre-service teacher clarity of instruction are highly consistent. This consistency implies that different aspects of instructional clarity explaining concepts, articulating instructions, and communicating effectively are well represented and uniformly assessed by the scale. Student Skill Acquisition (0.812) alpha value is lower than the other two, but still indicates good internal consistency. This value suggests that the scale accurately measures various facets of how students acquire skills, including understanding, application, and execution, within educational settings.

Table 3. Reliability Test Result

	Cronbach's Alpha
Teacher Fitness	.893
Teacher Clarity of Instruction	.871
Student Skill Acquisition	.812

Hypothesis 1 (H1): There is a significant positive correlation between pre-service PE teachers' fitness and students' skill acquisition in PE classes.

Based on Table 3, the correlation coefficient is very high, suggesting a strong positive relationship between pre-service teacher fitness and student skill acquisition. This implies that as pre-service PE teacher fitness increases, student skill acquisition also tends to increase significantly. The strong correlation indicates that the physical fitness of pre-service teachers, possibly reflecting their energy levels and ability to engage actively with students, is closely linked to how effectively students acquire skills in the classroom.

Table 4. Correlation Test

		Student Skill Acquisition
Teacher Fitness	Pearson Correlation	.871**
	Sig. (2-tailed)	
	N	653
Teacher Clarity of Instruction	Pearson Correlation	.949**
	Sig. (2-tailed)	.000
	N	653

**. Correlation is significant at the 0.01 level (2-tailed).

Social Cognitive Theory (Bandura, 1986) posits that learning occurs in a social context and can be facilitated through observation, imitation, and modeling. In PE, teachers who demonstrate high levels of fitness serve as direct role models for their students, providing a visible standard for what students can aspire to achieve. This modeling effect is particularly potent in environments where the physical capabilities and behaviors of the instructor are at the forefront of the educational content. Physiological Theory related to exercise and cognitive function suggests that physical fitness enhances cognitive processing and energy levels (Tomporowski, 2003). For pre-service PE teachers, being physically fit not only enhances their own cognitive and physical capabilities but also enables them to conduct longer, more vigorous, and engaging lessons. This heightened engagement and capability can directly influence the quality of instruction and the learning environment, fostering better skill acquisition among students.

Research consistently supports the link between teacher fitness and effective teaching outcomes. Studies have shown that teacher fitness positively impacts teacher behaviors and teaching efficacy, which in turn affects student outcomes (Castelli & Ward 2012). In the context of PE, where demonstration and participation are key components of teaching, the physical ability of the teacher to perform and teach complex movements accurately is crucial for effective skill transmission to students. Mechanisms Influencing Student Skill Acquisition:

1. Enhanced Demonstration Quality

   Fit teachers are more likely to demonstrate skills accurately and dynamically, which is essential in teaching physical skills. High-quality demonstrations help students visualise and internalise the correct techniques, promoting better learning and retention of physical skills (Rink 2002).

2. Increased Teacher Engagement and Energy

Fitness contributes to higher energy levels and greater overall well-being. Physically fit teachers can engage more actively with students, participate in physical activities during lessons, and maintain a lively and energetic classroom environment. This active engagement can motivate students and improve their participation and effort, which are critical for skill development.

3. Improved Classroom Management

Physical fitness enhances the teacher's ability to manage the classroom effectively. Fit teachers can move quickly and efficiently around the classroom, provide timely feedback, and maintain control, ensuring that the class remains focused and that learning opportunities are maximized.

Given the significant impact of pre-service PE teachers' fitness on student outcomes, several recommendations can be made for teacher education programs:

1. Fitness Training

Teacher education programs should include fitness training as a core component of their curriculum to ensure that pre-service PE teachers are adequately prepared to meet the physical demands of their profession.

2. Professional Development and Support

The university should focus on maintaining and improving the physical fitness of pre-service PE teachers during their study in the university, recognising its critical role in teaching effectiveness.

3. Assessment and Accountability

Regular fitness assessments could be integrated into the evaluation process for pre-service teachers, ensuring that they meet certain fitness standards before entering the profession.

The correlation between the fitness of pre-service PE teachers and the skill acquisition of their students highlights an essential aspect of educational effectiveness in physical education. By fostering a focus on physical fitness within teacher training programs, educational institutions can enhance the quality of physical education instruction and thereby improve student learning outcomes.

Hypothesis 2 (H2): There is a significant positive correlation between PE teachers' clarity of instruction and students' skill acquisition in PE classes.

This coefficient is even higher, indicating an extremely strong positive relationship. This correlation suggests that clearer and more effective communication from pre-service PE teachers significantly enhances student skill acquisition. The near-perfect correlation underscores the critical importance of clear instruction in educational settings, as it directly influences how well students understand and learn new concepts or skills. The quality of instruction in physical education (PE) classes plays a pivotal role in shaping students' learning experiences and outcomes. For pre-service PE teachers, who are still in the process of mastering their teaching skills, clarity of instruction is particularly crucial. A significant positive correlation between pre-service PE teachers' clarity of instruction and students' skill acquisition underscores the importance of effective communication and instructional strategies in PE.

Cognitive Load Theory (Sweller 1988) posits that learners have a limited capacity for processing new information. Clear and concise instructions by pre-service teachers can reduce extraneous cognitive load, allowing students to focus more effectively on learning the tasks at hand. For PE, this means that straightforward, easily understandable instructions are crucial for efficient skill acquisition. Constructivist Theory (Vygotsky 1978) emphasizes the role of clear communication in the 'Zone of Proximal Development' (ZPD), where learners can achieve higher understanding and skill development with the aid of a knowledgeable guide. In the context of pre-service PE teachers who help clear instructions to students perform just beyond their current abilities, thereby fostering greater skill development.

Mechanisms Influencing Skill Acquisition:

1. Enhanced Understanding and Retention

Clear instructions lead to better understanding and retention of learning materials. In PE, this means that students are more likely to remember how to perform a physical activity correctly if the pre-service PE teacher's instructions are clear.

2. Increased Engagement and Participation

Students are more likely to engage with the learning material and participate actively in the class if they clearly understand what is expected of them. Pre-service PE teachers who articulate their expectations and instructions clearly can boost student involvement,

which is crucial for practicing and mastering physical skills.

3. Effective Feedback

Clarity in instruction also extends to providing feedback. Clear, constructive feedback is essential for students to refine their skills and improve their performance. Pre-service PE teachers' ability to offer explicit feedback can significantly enhance the learning process.

Given the positive correlation between pre-service PE teachers' instructional clarity and student skill acquisition, several implications arise for teacher training and curriculum design:

4. Teacher Training

Training programs for pre-service PE teachers should emphasize the development of clear instructional skills. This can include practice in lesson planning, delivering instructions, and using language effectively to communicate complex physical movements.

5. Mentorship Programs

Pairing pre-service teachers with experienced mentors can help them develop clearer instructional strategies. Observing and receiving feedback from seasoned educators can provide practical insights into effective teaching methods.

6. Curriculum Design

Curricula for pre-service PE teachers should incorporate components of communication and instruction strategies. Workshops or modules on these topics can prepare them to deliver clearer, more effective PE lessons.

The correlation between pre-service PE teachers' clarity of instruction and students' skill acquisition is both significant and impactful. Enhancing instructional clarity can lead to more effective learning environments, where students acquire skills more efficiently and with greater confidence. By focusing on this aspect of teacher training, educational institutions can foster more competent and effective future physical educators.

CONCLUSION

These results have important implications for teacher education programs, curriculum development, and policy-making in physical education.

IMPLICATIONS

1. Teacher Training and Curriculum Development.

The strong correlation between pre-service PE teachers' fitness and students' skill acquisition suggests that physical education teacher training programs should emphasize physical fitness as a critical component of their curriculum. Ensuring that pre-service teachers not only understand the theoretical aspects of physical education but also meet high fitness standards could enhance their effectiveness in teaching and modeling physical skills. This approach may involve integrating more rigorous physical conditioning programs into teacher training curricula, along with continuous fitness assessments. Similarly, the significant correlation between clarity of instruction and student skill acquisition highlights the need for training programs to focus on the development of communication skills in teaching candidates. Programs could incorporate specific training on instructional strategies that enhance clarity, including the use of clear, concise language, effective demonstration techniques, and the structured breakdown of complex movements or strategies.

2. Professional Development.

The findings also suggest that ongoing professional development should be provided to in-service PE teachers to maintain and enhance both their physical fitness and instructional clarity. Workshops, seminars, and refresher courses could be offered as part of professional development programs to help teachers stay current with new teaching methods and to sustain high levels of personal fitness.

3. Policy Implementation.

At the policy level, faculty administrators could consider policies that encourage or require regular physical assessments for pre-service PE teachers, along with evaluations of their instructional clarity. Such policies could help maintain high standards in PE teaching and ensure that the benefits observed in student skill acquisition are sustained across the educational system.

The study's findings are significant as they contribute to a deeper understanding of the factors that affect learning outcomes in physical education. By demonstrating that pre-service teacher fitness and instructional clarity are closely linked to how well students acquire skills, the study provides empirical support for the integration of these elements into teacher training and development programs. It also adds to the body of knowledge that supports the holistic development of pre-service teachers, emphasizing that effective teaching involves both personal competence and the ability to communicate effectively.

While the study provides valuable insights, it also has limitations that should be acknowledged. First, the study's focus on pre-service teachers may limit the generalisability of the findings to more experienced teachers, who may have developed compensatory techniques that mitigate the impact of lower fitness levels or less clarity in instruction. Additionally, the correlational nature of the study does not establish causation; therefore, further research using experimental or longitudinal designs could be beneficial to explore the causal relationships between these variables.

Moreover, the study might have benefitted from a broader consideration of other factors that could influence student skill acquisition, such as student motivation, the learning environment, and other teacher characteristics like pedagogical knowledge or empathy.

In conclusion, the study highlights the crucial role of pre-service PE teachers' fitness and clarity of instruction in enhancing student skill acquisition in PE classes. These findings underscore the importance of incorporating comprehensive fitness and effective communication training into pre-service PE teacher education programs. They also suggest avenues for further research and policy development aimed at optimising educational outcomes in physical education settings.

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