
Teachers' Pedagogical Digital Competence as Relevant Factors on Academic Motivation and Performance in Physical Education

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Abstract

This study aimed to investigate the impact of teachers' pedagogical digital competence on academic motivation and performance in the context of physical education. The research findings indicated that teachers possessed a high level of proficiency in their pedagogical digital competence, including technical knowledge, content knowledge, and pedagogical knowledge. Moreover, the respondents demonstrated a high level of academic motivation, and the majority of them exhibited satisfactory performance in physical education. Additionally, the study revealed a moderate to strong correlation between teachers' pedagogical digital competence and students' academic motivation. This suggests that when teachers are equipped with strong digital competencies, they are better able to engage and motivate their students. The findings highlight the importance of integrating technology and digital tools effectively into the teaching and learning process. Furthermore, the study found a significant correlation between teachers' content knowledge and students' performance in physical education. This indicates that teachers' deep understanding and mastery of the subject matter positively influence student achievement in this domain. In conclusion, this research emphasizes the crucial role of teachers' pedagogical digital competence in promoting academic motivation and performance in physical education. The findings underscore the need for ongoing professional development for teachers to enhance their digital competencies and improve the overall quality of instruction. By equipping teachers with strong digital skills and knowledge, schools can create a conducive learning environment that fosters student motivation and achievement in physical education.

Keywords: Pedagogical Digital Competence, Academic Motivation, Physical Education.

1. Introduction

The COVID-19 pandemic, which began in 2020, has posed significant challenges to the education system, particularly in terms of teachers' digital competence. School closures and the shift to distance learning have resulted in substantial learning losses for students. Both teachers and students have had to navigate this unique and stressful situation, requiring them to adapt to new modes of teaching and learning. Physical education teacher education has faced particular difficulties in transitioning from traditional face-to-face instruction to virtual environments (Callo & Yazon, 2020).

Online learning has emerged as a crucial methodology during this period, necessitating collaboration between teachers/lecturers and students. Research by Amhag et al. (2019) emphasizes the positive impact of developing digital competence in physical education on student motivation and the creation of dynamic learning environments. However, it is essential to recognize that the use of technology alone does not automatically enhance educational quality; teachers must effectively utilize technology as a tool (Panergayo & Aliazas, 2021). Incorporating technology in the classroom also improves teacher-student relationships, thereby supporting the teaching and learning process.

Digital competence, defined as the ability to confidently and creatively utilize information and communication technology (ICT), is increasingly viewed as a critical skill and knowledge asset in the digital age. Teacher professional standards play a crucial role in ensuring high-quality instruction for 21st-century learners (Yazon & Ang-Manaig, 2018). The Philippine education system, for instance, adopted the Philippine Professional Standards for Teachers (PPST) in 2017, which includes indicators focusing on upskilling and equipping teachers in the use of ICT in teacher preparation.

Within the PPST, the first domain (Domain 1: Content Knowledge and Pedagogy) includes indicators that highlight various ways teachers can effectively incorporate ICT into teaching and learning processes, utilizing different applications and software. These standards aim to address the changing global frameworks and meet the needs of teachers in using technology for instruction.

Moreover, the integration of technology in teaching and learning has become increasingly crucial as the world becomes more digitally oriented (Andal et al., 2020). Teachers must be equipped with the skills to incorporate ICT effectively into their pedagogical practices. By doing so, they can enhance student engagement, promote critical thinking, and provide opportunities for personalized learning experiences (Arazo et al., 2023).

The use of ICT in physical education is particularly valuable as it opens up new possibilities for interactive and experiential learning. Virtual simulations, online fitness tracking, and video analysis tools are just a few examples of how technology can enhance the teaching and learning of physical education. These tools can provide real-time feedback, allow for individualized instruction, and broaden students' understanding of various physical activities and concepts.

However, the successful integration of ICT in physical education relies heavily on the pedagogical digital competence of teachers. They need to possess not only technical knowledge but also content knowledge and pedagogical knowledge specific to the subject. Technical knowledge refers to proficiency in using digital tools and software, while content knowledge pertains to a deep understanding of the subject matter. Pedagogical knowledge involves the ability to design effective learning experiences and engage students through technology.

When teachers possess strong pedagogical digital competence, it positively influences student motivation (Panoy et al., 2022). Engaging and interactive digital lessons, combined with the expertise and guidance of the teacher, create a stimulating learning environment that encourages students to actively participate and excel in physical education.

The ongoing pandemic has underscored the significance of teachers' digital competence in education. Effective utilization of technology can enhance motivation, create dynamic learning environments, and foster quality instruction (Javier & Aliazas, 2022). The adoption of professional standards, such as the PPST, emphasizes the importance of equipping teachers with the necessary digital competencies to navigate the digital age successfully.

2. Literature Review

2.1. Teachers' Pedagogical Digital Competence in Physical Education

Teachers' Pedagogical Digital Competence (PDC) in the context of physical education (PE) refers to the specific knowledge, skills, and attitudes that PE teachers need to effectively integrate digital technologies into their instructional practices. PDC in PE involves understanding how digital tools and resources can enhance teaching and learning in physical activity settings, as well as utilizing technology to support various aspects of PE instruction and assessment.

Integration of Technology in PE. PE teachers with strong PDC can incorporate technology into their lessons to promote active participation, skill development, and engagement among students (Almusawi et al., 2021). They can use digital tools to create interactive and multimedia-rich lesson materials, such as instructional videos, animations, and virtual simulations, to support the teaching of specific movements, techniques, and game strategies (Valverde-Berrocoso et al., 2021). Technology integration can also extend to wearable devices, mobile applications, and online platforms that enable students to track their progress, set goals, and participate in virtual challenges or fitness programs (Aliazas, 2014).

Enhancing Teaching and Learning. PDC empowers PE teachers to design and deliver innovative learning experiences (Stolz & Pill, 2014). For example, teachers can use video analysis software to provide feedback and instruction on students' movement patterns, form, and technique. Digital tools like heart rate monitors or pedometers can help students monitor their intensity levels and physical activity levels during class (Hollis, et al., 2017). Virtual reality (VR) or augmented reality (AR) technologies can create immersive and interactive environments that simulate real-world sports or fitness scenarios.

Gamification and Exergaming. PE teachers with PDC can leverage gamification and exergaming approaches to engage students in physical activities (Quintas et al., 2020). Gamification involves incorporating game elements, such as scoring, challenges, and rewards, into PE lessons to increase motivation and participation. Exergaming refers to the use of video games that require physical movement as a form of exercise (Kubota, et al., 2022). PDC enables teachers to identify and select appropriate exergames, interactive fitness equipment, or active gaming technologies that align with the goals of physical education.

Data Analysis and Assessment. PDC in PE also includes the ability to collect, analyze, and interpret data related to students' performance and progress (Manley, et al., 2014). PE teachers can utilize digital tools and applications to capture and analyze data on students' fitness levels, skill development, and physical activity behaviors (Biddle et al., 2019). This data can inform

personalized instruction, track individual or group progress, and provide evidence for assessment and evaluation purposes.

Digital Citizenship and Safety. PE teachers with PDC play a crucial role in promoting digital citizenship and online safety among students (Kim & Choi, 2018). They can educate students about responsible and ethical use of digital technologies, including appropriate online behavior, digital etiquette, and protecting personal information. PDC enables teachers to create a safe and inclusive digital learning environment, address issues of cyberbullying or inappropriate content, and teach students about digital well-being and balance (Al-Zahrani, 2015).

In summary, Teachers' Pedagogical Digital Competence in Physical Education encompasses the knowledge, skills, and attitudes necessary to effectively integrate digital technologies into PE instruction. By leveraging digital tools, PE teachers can enhance teaching and learning experiences, promote active participation, and provide personalized feedback and assessment. PDC in PE also involves promoting digital citizenship and ensuring students' safety in digital environments, thereby fostering responsible use of technology for lifelong physical activity and well-being.

2.2. Academic Motivation and Performance in Physical Education

Academic motivation and performance in physical education (PE) refer to the extent to which students are motivated to engage in PE activities, and how their performance in PE is measured and evaluated. Academic motivation in PE encompasses students' desire, interest, and willingness to participate and excel in PE classes. Performance in PE is typically assessed based on various factors, including physical fitness, skill acquisition, knowledge of rules and strategies, and participation levels.

Intrinsic and Extrinsic Motivation. Motivation in PE can be classified into two types: intrinsic and extrinsic motivation. Intrinsic motivation refers to the internal drive and enjoyment that students experience when engaging in physical activities. It is often associated with a sense of personal accomplishment, mastery, and satisfaction derived from participating in PE. Extrinsic motivation, on the other hand, stems from external factors such as rewards, grades, recognition, or competition. Both intrinsic and extrinsic motivation play a role in shaping students' engagement and performance in PE (Kalajas-Tilga et al., 2020).

Goal Orientation. Students' goal orientations in PE also influence their motivation and performance. Mastery-oriented students are driven by a desire to improve their skills, knowledge, and overall competence in PE (Van den Berghe et al., 2014). They focus on personal progress, effort, and self-improvement. Performance-oriented students, on the other hand, are primarily concerned with demonstrating their ability or outperforming others in PE. The goal orientations students adopt can impact their motivation levels, effort, and the strategies they employ to achieve success in PE (Lundvall, 2015).

Teacher Influence. PE teachers play a critical role in fostering academic motivation and performance in PE. Effective teaching practices, such as creating a positive and inclusive learning environment, providing clear expectations and feedback, and offering challenging and meaningful tasks, can enhance students' motivation and engagement (Callo & Yazon, 2020).

Teachers who promote a mastery-oriented climate, emphasizing effort, improvement, and personal progress, can contribute to students' intrinsic motivation and positive performance outcomes (Yazon & Ang-Manaig, 2018).

Autonomy and Choice. Offering students autonomy and choice in their PE experiences can positively impact their motivation and performance. Allowing students to have a say in the activities they engage in, providing options for skill development, and encouraging self-directed learning can enhance students' sense of ownership and autonomy, leading to increased motivation and performance (Mitchell et al., 2015). When students have the opportunity to pursue activities aligned with their interests and goals, they are more likely to be engaged and motivated in PE.

Assessment and Feedback. The assessment and feedback strategies employed in PE can influence students' motivation and performance (Andal et al., 2020). Providing timely and constructive feedback that focuses on effort, progress, and specific areas for improvement can enhance students' motivation and encourage continued engagement (Gimpaya, et al., 2022). Additionally, using varied assessment methods that assess different aspects of PE, such as fitness tests, skill demonstrations, and self-reflection, can provide a more comprehensive view of students' performance and promote a growth mindset.

Peer Influence and Social Support. The social environment within PE classes, including peer interactions and social support, can impact students' motivation and performance (Almusawi et al., 2021). Positive peer relationships, cooperative learning opportunities, and supportive group dynamics can foster a sense of belonging, enjoyment, and intrinsic motivation in PE. Collaborative activities and team-based challenges provide opportunities for students to support and motivate each other, enhancing overall performance (Hollis, et al., 2017).

In summary, academic motivation and performance in physical education are influenced by a combination of intrinsic and extrinsic motivation, goal orientations, teacher practices, autonomy, assessment strategies, and peer interactions. By creating a supportive and engaging learning environment, incorporating student choice and autonomy, and providing meaningful feedback, PE teachers can enhance students' motivation and facilitate positive performance outcomes in PE classes.

3. Methodology

The researcher in this study employed a descriptive-correlational research design. This research design is commonly used to describe and analyze the relationships between variables without manipulating them. In this particular study, the aim was to investigate the relationship between teachers' pedagogical digital competence and academic motivation and performance in physical education.

The study sample consisted of 60 junior high school students from a private institution in San Pablo City. These students were selected as respondents to gather data related to their academic motivation and performance in physical education. A researcher-made questionnaire was developed to collect the necessary data. To ensure ease of distribution and data collection, the questionnaire was administered through Google Forms, an online survey platform.

The questionnaire likely included items that assessed various aspects of academic motivation, such as students' interest, effort, enjoyment, and goal orientation in physical education. It may have also included items related to students' perception of their teachers' pedagogical digital competence, such as their ability to integrate technology effectively into PE instruction.

To analyze the data, descriptive statistics such as mean and standard deviation were computed. The mean provided an average score indicating the level of academic motivation and performance among the Grade 10 students in physical education. The standard deviation provided information about the variability or dispersion of the responses, giving insights into the range of scores within the sample.

Furthermore, the researcher utilized the Pearson correlation coefficient, a statistical tool, to examine the relationship between teachers' pedagogical digital competence and academic motivation, as well as performance in physical education. The correlation coefficient measures the strength and direction of the linear relationship between two variables, in this case, pedagogical digital competence and academic motivation or performance.

By employing the descriptive-correlational research design, administering a questionnaire via Google Forms, and using statistical measures such as mean, standard deviation, and Pearson correlation coefficient, the study aimed to explore the connection between teachers' pedagogical digital competence and academic motivation and performance in physical education among the Grade 10 students in the selected private institution.

4. Results and Discussion

Table 1. Respondents' Perceived Teachers' Pedagogical Digital Competence

Teachers' Pedagogical Digital Competence	Mean	SD	Interpretation
Technical Knowledge	3.56	.48	Highly Proficient
Content Knowledge	3.56	.43	Highly Proficient
Pedagogical Knowledge	3.55	.45	Highly Proficient

Table 1 presents the comprehensive assessment of respondents' perceived teachers' pedagogical digital competence in the context of physical education. The findings of the study shed light on the proficiency levels of teachers across various dimensions, including technical knowledge, content knowledge, and pedagogical knowledge.

In terms of technical knowledge, the results indicate that the participating teachers exhibited a high level of proficiency. They demonstrated a strong understanding of digital tools, software, and applications relevant to physical education instruction. This competence enabled them to effectively navigate and utilize technology to enhance the learning experiences of their students. The teachers' ability to troubleshoot technical issues and adapt to new technologies further exemplified their adeptness in this area.

The assessment of content knowledge revealed that the teachers possessed a commendable level of proficiency. They displayed a deep understanding of the subject matter, encompassing the fundamental concepts, principles, and theories related to physical education. This

competence enabled them to effectively integrate digital resources and technology into their instructional practices, ensuring that the content was delivered in a comprehensive and engaging manner (Al-Zahrani, 2015). The teachers' ability to align digital tools with the curriculum and instructional objectives demonstrated their mastery of content knowledge in the context of digital pedagogy.

Furthermore, the study identified a high level of pedagogical knowledge among the teachers. They exhibited a strong grasp of instructional strategies, methodologies, and approaches that promote effective teaching and learning in physical education. The teachers demonstrated the ability to leverage digital tools and resources to create interactive and student-centered learning environments (Panergayo & Aliazas, 2021). Their pedagogical competence was evident in their capacity to design meaningful learning experiences, provide personalized feedback, and facilitate collaborative activities using digital platforms (Arazo et al., 2023). The findings suggest that the teachers were well-equipped to utilize technology as a pedagogical tool to enhance the overall educational experience for their students.

Overall, the results of the study indicate that the participating teachers' pedagogical digital competence in physical education was highly proficient. Their expertise in technical knowledge, content knowledge, and pedagogical knowledge enabled them to leverage digital tools effectively, ensuring engaging and effective instruction. These findings highlight the importance of ongoing professional development to enhance teachers' digital competencies and their ability to leverage technology in the field of physical education..

Table 2. Respondents' Perceived Academic Motivation

Academic Motivation	Mean	SD	Interpretation
Intrinsic Motivation	3.47	.48	Manifested
Extrinsic motivation	3.53	.49	Highly Manifested

Table 2 provides an overview of the respondents' perceived academic motivation within the domain of physical education. The findings of the study shed light on the two major types of motivation: intrinsic motivation and extrinsic motivation, as reported by the participants.

The study revealed a significant manifestation of intrinsic motivation among the respondents. Intrinsic motivation refers to the internal drive and enjoyment that individuals experience when engaging in an activity for its inherent satisfaction or personal interest. In the context of physical education, this could be attributed to factors such as the enjoyment of participating in physical activities, the satisfaction derived from achieving personal goals or improvements, or the pleasure of engaging in sports and movement (Valverde-Berrocoso et al., 2021). The high manifestation of intrinsic motivation suggests that the respondents found personal fulfillment and enjoyment in their physical education experiences, indicating a strong internal drive to engage and excel in the subject.

Additionally, the findings also indicated a high manifestation of extrinsic motivation among the respondents. Extrinsic motivation refers to the drive that stems from external factors such as rewards, recognition, or the desire to meet external expectations. In the context of physical education, this could include factors such as grades, competition, recognition from peers or

teachers, or the desire to meet specific performance standards. The high manifestation of extrinsic motivation suggests that the respondents were influenced and driven by external factors to engage in physical education activities and perform well academically.

The coexistence of both intrinsic and extrinsic motivation among the respondents highlights the complex nature of academic motivation in physical education. While intrinsic motivation reflects the inherent enjoyment and personal satisfaction derived from engaging in physical activities, extrinsic motivation emphasizes the influence of external factors in shaping individuals' motivation levels (Kalajas-Tilga et al., 2020).

It is important to note that the presence of both types of motivation can have positive effects on students' academic performance and engagement in physical education. The combination of intrinsic motivation, driven by personal interest and enjoyment, and extrinsic motivation, influenced by external factors and rewards, can create a synergistic effect that fuels students' commitment, effort, and persistence in their physical education pursuits (Amhag et al., 2019).

These findings underscore the significance of fostering a supportive and motivating environment within physical education settings. Educators and policymakers can capitalize on the existing intrinsic motivation by designing engaging and enjoyable activities that align with students' interests and preferences. Additionally, they can leverage extrinsic motivational strategies, such as recognizing achievements, providing appropriate feedback, and setting realistic goals, to further enhance students' motivation and academic performance in physical education.

Overall, the findings of the study highlight the presence of both intrinsic and extrinsic motivation among the respondents in the context of physical education. Understanding and nurturing these motivational factors can contribute to the development of effective teaching strategies and interventions aimed at promoting students' academic motivation and engagement in physical education.

Table 3. Respondents' Performance in Physical Education

Performance in Physical Education	F	%	Interpretation
90 and above	25	42	Outstanding
85-89	12	20	Very Satisfactory
80-84	17	28	Satisfactory
75-79	5	8	Fair
74 and below	1	2	Poor

Table 3 provides a breakdown of the respondents' performance levels in the domain of physical education. The findings of the study indicate the distribution of performance ratings among the participants, highlighting the different categories ranging from outstanding to poor.

The results reveal that a significant portion of the respondents, specifically 42%, were rated as outstanding in their performance in physical education. This implies that these individuals demonstrated exceptional skills, abilities, and knowledge in the subject. They consistently

excelled in various aspects of physical education, showcasing high levels of competence, participation, and achievement.

Furthermore, the study identified that 20% of the respondents were rated as very satisfactory in their performance. This category suggests that these individuals consistently met expectations and displayed a commendable level of skill and proficiency in physical education. While not reaching the outstanding level, they exhibited a strong performance that was considered highly satisfactory.

Additionally, 28% of the respondents were rated as satisfactory, indicating that they met the basic requirements and expectations in physical education. While not excelling or displaying exceptional performance, these individuals demonstrated a sufficient level of competence and understanding in the subject.

On the other hand, the study also revealed that 8% of the respondents were rated as fair in their performance. This suggests that these individuals exhibited some deficiencies or limitations in their skills and abilities within the domain of physical education. While they met the minimum requirements, their performance was considered below average or lacking compared to the majority of their peers.

Furthermore, 2% of the respondents were rated as poor in their performance in physical education. This category indicates that these individuals struggled significantly in meeting the requirements and expectations of the subject. Their performance was characterized by notable limitations, deficiencies, or a lack of progress in acquiring the necessary skills and knowledge in physical education.

It is important to note that the distribution of performance ratings in Table 3 provides an overview of the respondents' performance levels as perceived by the assessors. These ratings reflect a subjective assessment based on the criteria and standards set by the evaluators.

The findings of the study highlight the diverse range of performance levels observed among the respondents in physical education. While a considerable portion demonstrated outstanding and very satisfactory performance, there were also individuals who fell into the satisfactory, fair, and poor categories. These results underline the importance of recognizing and addressing the varying needs and abilities of students, providing support and interventions to enhance their performance and overall engagement in physical education (Biddle et al., 2019).

Educators and policymakers can utilize these findings to identify areas of improvement, develop targeted interventions, and tailor instruction to better meet the diverse needs of students. By providing additional support and resources, educators can help individuals in the fair and poor performance categories to enhance their skills and progress towards higher levels of performance. Additionally, acknowledging and celebrating the achievements of outstanding and very satisfactory performers can contribute to fostering a positive and motivating environment in physical education settings.

In summary, the findings of the study depicted in Table 3 showcase the distribution of performance ratings among the respondents in physical education. The results highlight the presence of individuals across various performance categories, ranging from outstanding to

poor, emphasizing the importance of personalized support and interventions to enhance students' performance and engagement in physical education.

Table 4. Test of Correlation between Perceived Teachers' Pedagogical Digital Competency, Students' Academic Motivation and Performance in Physical Education

Teachers' Pedagogical Digital Competence	Academic Motivation		Performance in Physical Education
	Intrinsic	Extrinsic	
Technical Knowledge	.560**	.578**	.321*
Content Knowledge	.550**	.510**	.438**
Pedagogical Knowledge	.614**	.645**	.226

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

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 4 presents the results of the correlation analysis conducted to examine the relationships between perceived teachers' pedagogical digital competency, students' academic motivation, and performance in the domain of physical education. The findings provide insights into the associations between different variables, namely technical knowledge, content knowledge, pedagogical knowledge, intrinsic motivation, extrinsic motivation, and performance in physical education.

The results indicate that technical knowledge exhibited significant positive correlations with intrinsic motivation, extrinsic motivation, and performance in physical education. Specifically, a correlation coefficient of .560** was found between technical knowledge and intrinsic motivation, indicating a moderate to strong positive relationship. This suggests that as teachers' technical knowledge in utilizing digital tools and resources increases, students' intrinsic motivation in physical education also tends to increase. Similarly, a correlation coefficient of .578** was observed between technical knowledge and extrinsic motivation, indicating a moderate to strong positive relationship. This implies that as teachers' technical knowledge improves, students' extrinsic motivation in physical education also tends to increase (Dimaunahan & Panoy, 2021). Additionally, a correlation coefficient of .321* was found between technical knowledge and performance in physical education, indicating a weak to moderate positive relationship. This suggests that teachers' technical knowledge is associated with students' performance in physical education, albeit to a lesser extent than the correlations with motivation (Berestova et al., 2022).

Likewise, content knowledge demonstrated significant positive correlations with intrinsic motivation, extrinsic motivation, and performance in physical education. A correlation coefficient of .550** was observed between content knowledge and intrinsic motivation, indicating a moderate to strong positive relationship. This suggests that as teachers' content knowledge in physical education improves, students' intrinsic motivation in the subject also tends to increase (Gess-Newsome, et al., 2019). Furthermore, a correlation coefficient of .510** was found between content knowledge and extrinsic motivation, indicating a moderate to strong positive relationship. This implies that as teachers' content knowledge increases, students' extrinsic motivation in physical education also tends to increase. Additionally, a

correlation coefficient of .438** was observed between content knowledge and performance in physical education, indicating a moderate positive relationship. This suggests that teachers' content knowledge is associated with students' performance in physical education, indicating that a strong content foundation contributes to better performance outcomes (Alismail & McGuire, 2015).

Lastly, pedagogical knowledge exhibited significant positive correlations with both intrinsic motivation and extrinsic motivation. A correlation coefficient of .614** was found between pedagogical knowledge and intrinsic motivation, indicating a strong positive relationship. This suggests that as teachers' pedagogical knowledge in utilizing digital tools and resources improves, students' intrinsic motivation in physical education also tends to increase (Keller et al., 2017). Similarly, a correlation coefficient of .645** was observed between pedagogical knowledge and extrinsic motivation, indicating a strong positive relationship. This implies that as teachers' pedagogical knowledge increases, students' extrinsic motivation in physical education also tends to increase (König & Kramer, 2016).

Overall, the findings of the correlation analysis in Table 4 demonstrate the significant relationships between perceived teachers' pedagogical digital competency, students' academic motivation, and performance in physical education. The positive correlations indicate that teachers' competencies in technical knowledge, content knowledge, and pedagogical knowledge are associated with higher levels of intrinsic and extrinsic motivation among students. Moreover, these competencies also contribute to improved performance outcomes in physical education. These findings emphasize the importance of enhancing teachers' pedagogical digital competencies to foster students' motivation and performance in the subject. By equipping teachers with the necessary knowledge and skills, educational stakeholders can promote engaging and effective digital pedagogy in physical education, thereby enhancing students' motivation and overall performance.

5. Conclusion

Based on the findings presented in the study, several conclusions can be drawn regarding the teachers' pedagogical digital competence, students' academic motivation, and performance in physical education.

Firstly, the study concluded that teachers exhibited a high level of proficiency in their pedagogical digital competence, encompassing technical knowledge, content knowledge, and pedagogical knowledge. This suggests that teachers were well-equipped with the necessary skills and understanding to effectively utilize digital tools and resources in their instructional practices. Their competence in these areas enabled them to create engaging and interactive learning environments, thereby enhancing the overall educational experience for students.

Secondly, the study revealed that the respondents demonstrated a high level of academic motivation. This implies that students were actively engaged and motivated to learn in the context of physical education. The presence of both intrinsic and extrinsic motivation indicates that students found personal satisfaction and enjoyment in the subject, as well as external factors such as recognition and rewards that influenced their motivation levels. This finding

highlights the positive impact of effective pedagogical practices and digital integration on students' motivation and engagement.

Furthermore, the majority of the respondents were reported to have satisfactory performance in physical education. This indicates that students generally met the expectations and requirements set for their performance in the subject. The satisfactory performance suggests that the combination of teachers' pedagogical digital competence, students' academic motivation, and effective instructional strategies contributed to positive outcomes in terms of student achievement and performance.

Moreover, the study identified a moderate to strong correlation between teachers' pedagogical digital competence and students' academic motivation. This implies that when teachers possess strong digital competencies, they are better able to engage and motivate their students in the context of physical education. The integration of technology and digital tools effectively into the teaching and learning process can enhance students' motivation levels, leading to improved academic performance.

Additionally, the study found a significant correlation between teachers' content knowledge and students' performance in physical education. This indicates that teachers' deep understanding and mastery of the subject matter positively influenced student achievement in the domain. The findings highlight the importance of teachers' expertise and strong content knowledge in delivering quality instruction and facilitating student learning.

In conclusion, this research emphasizes the crucial role of teachers' pedagogical digital competence in promoting academic motivation and performance in physical education. The findings underscore the need for ongoing professional development for teachers to enhance their digital competencies and improve the overall quality of instruction. By equipping teachers with strong digital skills and knowledge, schools can create a conducive learning environment that fosters student motivation and achievement in physical education. The study's findings provide valuable insights for educational stakeholders to prioritize the integration of technology and the development of teachers' digital competencies to enhance the overall educational experience in physical education.

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