JURNAL UPI

Jurnal Pendidikan Jasmani dan Olahraga

Journal homepage: http://ejournal.upi.edu/index.php/penjas/index

JPJO

Training Needs of Physical Education Teachers in Jordan: Perspectives on Aligning with the Knowledge Economy

Lubna Mahmoud Obeidat[1], Mohammad Omar Al-Momani[2], Saa Saleh Obeidat[2]*

[1]Department of Basic Sciences, Irbid University College, Al-Balqa Applied University, Jordan
[2]Department of Applied Sciences, Al-Huson University College, Al-Balqa Applied University, Jordan
*Correspondence: E-mail: Lubna.222@bau.edu.jo

ABSTRACT

The study aimed to identify the training needs of physical education teachers in light of the requirements of the knowledge economy from the perspective of physical education teachers in Jordan. The study used a descriptive approach. The training need questionnaire was used as the study tool. The questionnaire consisted of 23 items. The sample of the study consisted of 231 male and female teachers. The result of the study highlighting the training needs of physical education teachers in Jordan, considering the demands of the knowledge economy from the teacher perspective, was moderate with an arithmetic mean of 2.98 and a standard deviation of 0.59. The study also found no statistically significant differences in training needs based on gender and years of experience.

ARTICLE INFO

Article History:
Submitted/Received August 2025
First Revised August 2025
Accepted September 2025
Publication Date September 2025

Keyword:
knowledge economy, physical education teachers, training needs

INTRODUCTION

The contemporary world is witnessing rapid advancements and transformations across various domains of human life, including knowledge production, scientific development, digital technologies, and information and communication systems. These changes have led to a paradigm shift toward what is commonly referred to as the knowledge economy, in which knowledge-based activities constitute the primary driver of economic growth. The education sector has been significantly influenced by these developments, resulting in a transformation of educational processes to ensure alignment with modern demands across all components. Within this context, teachers represent a fundamental pillar of the educational process and play a central role in implementing educational reform and keeping pace with contemporary developments. Consequently, the teacher's role has evolved, giving rise to new responsibilities that require higher levels of performance, efficiency, and professional competence. To meet these demands, teachers are expected to engage in continuous training, self-development, research, and openness to innovative concepts, with the aim of enhancing their professional capabilities and fulfilling their evolving roles effectively and efficiently (Eslami & Vahdani, 2024; Ahn & Lim, 2025; Al-Momani, 2022; Liu & Keating, 2021; Işıkgöz, 2024; Soini et al., 2024).

Teacher preparation prior to service, as well as continuous professional development during service, constitutes the foundation of professional growth and scientific advancement. This process aims to enhance teachers' efficiency and equip them with the scientific, educational, and professional competencies required by the nature of their work, thereby improving overall productivity. Several factors necessitate continuous professional development, including the rapid expansion of knowledge, evolving educational concepts, and the emergence of global trends such as the knowledge economy, globalization, and quality assurance. The increasing accessibility of information through diverse communication channels further compels teachers to remain up to date with scientific and technological advancements. Accordingly, continuous professional development is essential for teachers to successfully perform their renewed roles, with in-service training serving as a primary mechanism for sustaining such growth (Romero-Martín et al., 2017; Al-Ta'ani, 2002; Tomura et al., 2023; López-García et al., 2023; Cho et al., 2024).

In-service training is an integral component of the educational process, focusing on the pivotal role of the teacher as the primary catalyst for achieving educational goals and objectives. The significance of the teacher's role in fostering social and economic progress is paramount. Consequently, it necessitates an educator who maintains currency with contemporary developments and utilizes all available resources, whether through personal professional development or specialized training programs (Al-Sakarna, 2011; Yang & Li, 2024; Magallanes et al., 2024; Rababah, 2017; Sears & Wilson, 2024; Fletcher & Beckey, 2023).

Training constitutes a core element of human resource development, as it enhances job-related skills and improves performance. In the modern era, in-service training has become an urgent necessity due to rapid technological and professional developments, particularly within the teaching profession. Maintaining competitiveness requires educators to continuously adapt to technological advancements and evolving professional demands (Hizam et al., 2021; Pot et al., 2019; Gawrisch et al., 2020; González-Rivera et al., 2023; Zhang et al., 2024).

The teacher is the cornerstone of any educational system. Without a trained teacher, no educational system can achieve its goals. With the advent of the knowledge economy, globalization, and technological advancement, the demand for professionally prepared

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

teachers who are capable of producing knowledge and continuously developing their competencies has increased significantly (Shearer et al., 2018; Johnston, 2007; Cañadas et al., 2019; Opstoel et al., 2022; Tsangaridou et al., 2022).

In-service training is a critical component of a teacher's professional development. The necessity of ongoing preparation for the profession is dictated by the perpetual evolution of its requirements. In-service training constitutes the foundation for ensuring the continuous development of workers, thereby guaranteeing that their tasks, responsibilities, and duties remain compatible with developments in their respective fields. It also provides new knowledge, adds diverse information and skills, and influences trends, modifying ideas and changing behavior. This is the key to success for the individual and the institution (Akkaya, 2021; Pot et al., 2018; Robinson et al., 2018; Tsangaridou et al., 2021).

The knowledge economy is defined as an economic system centered on the acquisition, dissemination, utilization, application, and innovation of knowledge. The primary objective of this economic model is to enhance the quality of life across all dimensions through the utilization of information services and advanced technological applications. It employs the human mind as a source of financial value and utilizes scientific research to instigate strategic modifications in the nature of the economic environment and its structure. The purpose of these modifications is to render the economic system more responsive and in alignment with the challenges posed by globalization, information and communications technology, the universality of knowledge, and sustainable development in its comprehensive, integrated concept (Cañadas et al., 2019; Al-Momani, 2016; Herrero-González et al., 2023).

In accordance with the knowledge economy, teacher preparation and training entail the acquisition, dissemination, utilization, application, and innovation of knowledge. This process is undertaken with the objective of enhancing the quality of life in all its dimensions. It is facilitated by a comprehensive information service and state-of-the-art technological applications. These services and applications leverage human capital, scientific research, and advanced methodologies to effect transformative changes in the nature of the economic environment and its structure. The purpose of these changes is to enhance the environment's responsiveness and align it with the demands of globalization and information technology (Al-Ta'ani, 2007; Kiremitci et al., 2023; Sakallı & Şenel, 2024; Aparicio-Herguedas et al., 2020).

The transition toward a knowledge-based economy, as evidenced by the development of teacher training programs and the cultivation of human capital, has become imperative to maintain congruence with the prevailing age of knowledge, information, and communications. The relationship between teachers and the knowledge economy is highlighted by equipping teachers with higher-order thinking skills that enable them to understand, analyze, and infer information, reorganize it, and develop it into competitive and marketable knowledge. Teachers' awareness of the nature of the current era, as well as their understanding of the profound implications of rapid changes and present and future challenges resulting from the global trend toward a knowledge-based economy, facilitates the determination of the nature and type of teacher training needs. Teachers, in essence, serve as the primary agents for ensuring the desired positive change in any educational development process. This enables them to address shortcomings in training programs, thereby enhancing the quality of teacher performance, enabling them to fulfil their roles, and improving the quality of educational outcomes. The impact of these improvements is bound to be positively reflected on students and society (Aparicio-Herguedas et al., 2023; Farias et al., 2022; Al-Ghonmeein et al., 2024; Atabek, 2019; García-Cazorla et al., 2024; Amorim & Ribeiro-Silva, 2024).

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

The process of reforming and developing the education system in Jordan has undergone various stages since its inception, owing to successive developments and changes in this sector and other fields. The emphasis was placed on the imperative of providing qualified human cadres with technical and educational experience, wherein the teacher assumes a pivotal, influential, and supportive role through continuous training and development. The objective is to effect a transformation in his behavior in the domains of information, experiences, skills, and attitudes, thereby enhancing his performance and elevating his competencies to align with the demands of the knowledge economy (Al-Ghonmeein & Al-Sa'aida, 2023; Hegarty, 2015; Nascimbeni & Burgos, 2016; Slingerland et al., 2024).

A considerable body of research (Mishra & Koehler, 2006; UNESCO, 2015; Li et al., 2025; Silva et al., 2021; Jawarneh et al., 2025; Gaowgzeh et al., 2021; Tsangaridou et al., 2023), has been dedicated to the identification of teachers' training needs and the development of training programs that align with the demands of the knowledge economy. These studies underscored the imperative for training teachers to cultivate students' attitudes toward scientific openness and a passion for research and exploration. Additionally, emphasis was placed on the necessity of incorporating professional development components to address the future requirements of educators. This necessitates the implementation of training programs for in-service physical education teachers, tailored to their respective professional disciplines and cognitive needs. Furthermore, the necessity of following up with them after the completion of any training course or program was underscored to ensure the degree of their application of the knowledge and skills they have acquired. Accordingly, the present study endeavored to ascertain the training needs of physical education teachers in light of the requirements of the knowledge economy in Jordan from the perspective of the teachers themselves. The objective of the study was to ascertain the training needs of physical education teachers in Jordan in the context of the knowledge economy, as perceived by the teachers themselves. Additionally, the study sought to identify any disparities in the perceived training needs based on gender (male, female) and years of practical experience (less than 10 years, more than 10 years).

METHODS

A descriptive research design was employed to identify the training needs of physical education teachers in Jordan in light of the requirements of the knowledge economy. This approach was considered the most appropriate for achieving the objectives of the study.

Research Participants

The study population comprised all physical education teachers working in public schools under the Jordanian Ministry of Education during the second semester of the 2024–2025 academic year. The study sample consisted of 231 male and female physical education teachers from government schools in the Irbid First District Education Directorates, Irbid Second District Education Directorates, Ajloun Governorate Education Directorates, and Jerash Governorate Education Directorates. The participants were selected using a simple random sampling method. Table 1 presents the distribution of the study sample according to gender and years of teaching experience.

Table 1. Distribution of study samples according to gender and years of teaching experience

Variable	Categories	Number	Percentage
Sex	Male	127	55%
	Female	104	45%
Total		231	100%

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

Years of teaching experience	More than 5 years	98	42%
	Below 5 years	133	58%
Total		231	100%

Research Instruments

To achieve the objectives of the study, a questionnaire was developed as the primary research instrument. The questionnaire was constructed based on the relevant theoretical framework and a review of previous studies related to teacher training needs and the knowledge economy, including studies by Akhu Arsheeda (2013), Al-Sawafi (2015), Eslami and Vahdani (2024), Ahn and Lim (2025), Al-Momani (2022), Al-Ta'ani (2002), Tomura et al. (2023), Romero-Martín et al. (2017), Magallanes et al. (2024), Gawrisch et al. (2020), Johnston (2007), Akkaya (2021), Atabek (2019), Gaowgzeh et al. (2021), and Hizam et al. (2021). The initial version of the questionnaire consisted of 29 items designed to assess the training needs of physical education teachers in Jordan in light of the requirements of the knowledge economy.

Validity of the instrument

Face Validity

To establish face validity, the initial version of the questionnaire was reviewed by a panel of ten experts specializing in curricula, teaching methods, and physical education from the University of Jordan, Al-Balqa Applied University, and Yarmouk University. The experts were asked to evaluate the clarity and linguistic accuracy of the items, their relevance to the nature and objectives of the study, their logical sequence, and overall coherence. Based on the experts' feedback, items that received an approval rate of at least 80% were retained, while others were revised or removed as appropriate. Consequently, the final version of the questionnaire comprised 23 items, designed to assess the training requirements for physical education teachers in Jordan in the context of the knowledge economy.

Internal Consistency Validity

To verify internal consistency validity, the questionnaire was administered to a pilot sample of 25 male and female physical education teachers from the same population but outside the main study sample. Pearson's correlation coefficients were calculated between each item and the total score of the questionnaire. As shown in Table 2, the correlation coefficients ranged from 0.51 to 0.67, indicating acceptable levels of internal consistency.

Table 2. Pearson correlation coefficient between the questionnaire items and the total score of the scale

Item	Correlation coefficient	Item	Correlation coefficient	Item	Correlation coefficient
1	0.58	9	0.52	17	0.67
2	0.59	10	0.62	18	0.52
3	0.63	11	0.67	19	0.55
4	0.61	12	0.51	20	0.60
5	0.66	13	0.63	21	0.67
6	0.58	14	0.52	22	0.57
7	0.52	15	0.59	23	0.66
8	0.67	16	0.63		

As illustrated in Table 2, the Pearson's correlation coefficients for each item of the questionnaire and the total score ranged from 0.51 to 0.67. These values are deemed acceptable, thereby validating the questionnaire and affirming its applicability to the study sample.

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

To verify the reliability of the questionnaire, it was administered to a survey sample consisting of 25 male and female physical education teachers from the same study community but from outside the study sample. The reliability coefficient was calculated using Cronbach's alpha coefficient for all items of the questionnaire, and for the questionnaire as a whole, where the reliability coefficient for the questionnaire as a whole reached (0.88), which are statistically acceptable values, indicating the questionnaire's applicability to the study sample.

Data Analysis

The study employed the Statistical Analysis Program for Social Research (SPSS 21) to execute the requisite statistical processing, which is outlined as follows:

- Arithmetic means, standard deviations, and ranks were used to determine the degree of response of the study sample members to the questionnaire items.
- Two-sample t-test was used to determine the significance of differences in the variables of gender and teacher practical experience.
- Pearson's correlation coefficient was used to verify the validity of the questionnaire.
- Cronbach's alpha coefficient was used to verify the reliability of the questionnaire.

The responses of the study sample were measured using a five-point Likert scale, comprising five response levels with assigned scores: very high (5 points), high (4 points), medium (3 points), low (2 points), and very low (1 point). To determine the ranking of each item on the scale, the category length was calculated using the following formula:

$$\textit{Category length} = \textit{upper limit} - \textit{lower limit} = 5 - 1$$

The scale was then divided into three levels. Based on this calculation, a standardized criterion was established to evaluate the level of training needs required for physical education teachers in Jordan in accordance with the requirements of the knowledge economy. Table 3 presents this classification criterion.

Table 3. Statistical criteria for interpreting mean scores and their levels

Degree	Arithmetic mean
Low	1.00-2.32
Medium	2.33-3.66
High	5:00-3.67

RESULTS

To address the first research question, arithmetic means and standard deviations were calculated for the items measuring the training needs of physical education teachers in Jordan in light of the requirements of the knowledge economy, as perceived by the teachers themselves. The results are presented in Table 4, with items arranged in descending order according to their arithmetic means.

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

Table 4. The level of training needs required for physical education teachers

Rank	Item	Arithmetic Mean	Deviation Standard	Level
1	Employing communication skills in the teaching and learning process	4.29	0.67	High
2	Mastering basic computer skills in the educational process	4.02	0.55	High
3	Leveraging the knowledge economy in developing curricula	3.88	0.58	High
4	Planning the use of learning resources to enhance student learning	3.71	0.61	High
5	Access to educational resources that support the achievement of general educational goals	3.60	0.63	Medium
6	Utilizing the knowledge economy system to identify physical education skills	3.52	0.67	Medium
7	Employing the knowledge economy to develop students' problem-solving skills	3.44	0.58	Medium
8	Motivating students to build knowledge independently	3.38	0.63	Medium
9	Directing students towards research and exploration	3.21	0.51	Medium
10	Taking into account individual differences and abilities of students	3.11	0.52	Medium
11	Involving students in assessing their learning according to knowledge economy standards	3.04	0.61	Medium
12	Providing clear and appropriate feedback to students	2.91	0.57	Medium
13	Developing problem-solving and decision-making skills	2.83	0.74	Medium
14	Preparing study plans based on students' needs	2.75	0.62	Medium
15	Developing verbal and nonverbal communication skills with others	2.64	0.66	Medium
16	Benefiting from the knowledge economy to develop my cognitive abilities	2.53	0.58	Medium
17	Preparing educational research related to the specialization	2.41	0.52	Medium
18	Employing teamwork skills	2.38	0.50	Medium
19	Benefiting from educational courses and scientific journals to develop my professional capabilities	2.32	0.55	low
20	Mastering time management skills and techniques	2.28	0.61	low
21	Practice continuous self-assessment	2.16	0.59	low
22	Familiarity with ways to develop intellectual capital	2.15	0.57	low
23	Using electronic search engines to obtain information	2.08	0.52	low
The overall score for the level of training needs for physical education teachers in Jordan in light of the requirements of the knowledge economy.		**2.98**	**0.59**	**Medium**

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

The findings indicated that the overall level of perceived training needs among physical education teachers in Jordan was moderate, with a mean score of 2.98 and a standard deviation of 0.59. Of the 23 items, four were rated at a high level, fourteen at a medium level, and five at a low level.

The item "employing communication skills in the teaching and learning process" ranked first, recording the highest mean score (M = 4.29, SD = 0.67). This was followed by "mastering basic computer skills in the educational process" (M = 4.02, SD = 0.55). In contrast, items related to digital research skills and intellectual capital development received comparatively lower ratings. Specifically, the item "familiarity with ways to develop intellectual capital" ranked near the bottom (M = 2.15, SD = 0.57), while "using electronic search engines to obtain information" recorded the lowest mean score (M = 2.08, SD = 0.52). To examine whether perceived training needs differed according to gender, arithmetic means and standard deviations were calculated, and an independent-samples t-test was conducted, as shown in Table 5.

Table 5: Arithmetic Means, Standard Deviations, and t-Test Results for the Training Needs of Physical Education Teachers According to Gender

Field	Sex	Arithmetic mean	Deviation Standard	t Value	Level Significance
Training needs for physical education teachers in Jordan in light of the requirements of the knowledge economy	Male	3.75	0.69	1.368	0.184
	Female	3.68	0.66		

As presented in Table 5, no statistically significant differences were found in the level of training needs attributable to gender (t = 1.368, p = 0.184). Similarly, differences in perceived training needs based on years of teaching experience were analyzed using arithmetic means, standard deviations, and an independent-samples t-test. Table 6 reveals the results indicated no statistically significant differences between teachers with less than 10 years of experience and those with more than 10 years of experience (t = 1.118, p = 0.285).

Table 6. Arithmetic Means, Standard Deviations, and t-Test Results for the Training Needs of Physical Education Teachers According to Years of Teaching Experience

Field	Years of teaching experience	Arithmetic Mean	Deviation Standard	t Value	Level Significance
Training needs for physical education teachers in Jordan in light of the requirements of the knowledge economy	Less than 10 years	4.05	0.52	1.118	0.285
	More than 10 years	3.96	0.63		

As shown in Table 6, no statistically significant differences were found in the level of training needs required by physical education teachers in Jordan in light of the requirements of the knowledge economy, as perceived by the teachers themselves, with respect to years of teaching experience (less than 10 years and more than 10 years).

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

DISCUSSION

Based on the results of the study, the results of the first research question show the level of training needs necessary for physical education teachers in Jordan, as perceived by the teachers themselves, was moderate, with a mean score of 2.98 and a standard deviation of 0.59. This outcome can be ascribed to the finding that physical education teachers in Jordan exhibit a satisfactory degree of professional and cognitive competencies; however, this level falls short of the benchmarks necessary to effectively address the demands of the knowledge economy. A review of the literature revealed that aspects related to communication and interaction were identified as the top training priorities, indicating an awareness of the pivotal role of the human dimension in the educational process. This dimension was recognized as a foundational element in establishing effective relationships with students and cultivating a positive learning environment. The results also revealed a marked interest in fundamental technical skills related to computer use, reflecting a growing awareness of the importance of technology and its role in supporting education. Conversely, a conspicuous deficiency was identified in domains pertaining to digital research and intellectual capital development, signifying an absence of investment in contemporary instruments for knowledge acquisition and their strategic implementation to benefit the educational process. Consequently, it can be posited that physical education teachers tend to prioritize the humanistic and traditional dimensions of their profession, while concurrently necessitating specialized training programs that augment their capacity to remain at the forefront of technological and cognitive advancements. These programs are designed to equip educators with the requisite competencies to effectively engage in an educational milieu characterized by knowledge and innovation. This result is consistent with the findings reported by Pot et al. (2019), Atabek (2019), and Al-Momani (2016), while differing from the results reported by Pot et al. (2018) and Akkaya (2021).

The results of the second research question also showed no statistically significant differences in the level of training needs of physical education teachers in Jordan, in light of the requirements of the knowledge economy, as perceived by the teachers themselves. This finding can be attributed to the gender variable (male and female). It suggests that both male and female teachers articulated their training requirements to a comparable extent when considering the demands of the knowledge economy. This outcome may be explained by the inherent characteristics of the field of physical education, which involves tasks and responsibilities that are uniform for all educators, regardless of gender. This uniformity arises from the fact that teachers in this field are subject to the same professional conditions and face similar educational and technological challenges. Moreover, the requirements of the knowledge economy are primarily associated with cognitive and technical competencies rather than with individual gender differences. As a result, male and female teachers demonstrate a similar level of awareness regarding their training needs. Additionally, the absence of statistically significant differences may reflect a shared awareness among both groups of the importance of self-development and keeping pace with ongoing technological and cognitive changes. This shared awareness likely fosters a mutual recognition of the necessity for continuous training and professional development. The findings indicate that gender does not play a substantial role in determining training needs, suggesting that training programs may be designed and implemented in a unified manner without differentiation between male and female teachers. This result is consistent with the findings of Gawrisch et al. (2020), Al-Ghonmeein et al. (2024), and Jawarneh et al. (2025), while differing from the results reported by Hizam et al. (2021) and Al-Momani (2016).

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

The results of the third research question also revealed no statistically significant differences in the level of training needs of physical education teachers in Jordan, when viewed in the context of the requirements of the knowledge economy, as perceived by the teachers themselves. This finding is attributed to the variable of years of practical experience (less than 10 years and more than 10 years). It suggests that teachers with varying levels of experience reported comparable training needs in relation to the knowledge economy. This phenomenon may be explained by the rapid advancements in knowledge and technology, which have generated new challenges for all teachers, regardless of their professional experience. These challenges require continuous skill development, thereby reducing the influence of years of experience on perceived training needs. Furthermore, the knowledge economy is grounded in contemporary competencies, such as technological proficiency, digital research skills, and the development of intellectual capital. In the current context, traditional experience alone is insufficient to address these demands, highlighting the need for ongoing professional training. In addition, the professional environment of physical education teachers is characterized by unified systems, programs, and job requirements, ensuring that teachers face similar needs regardless of their years of service. Accordingly, the findings of this study indicate that training needs related to the knowledge economy are comprehensive and applicable to all teachers. These results underscore the importance of developing cohesive training programs that prioritize contemporary demands over differences in years of experience. This finding is consistent with the results reported by Al-Momani (2022), Gaowgzeh et al. (2021), and Ahn and Lim (2025), while differing from those reported by Robinson et al. (2018) and Magallanes et al. (2024).

CONCLUSION

The findings of the study indicated that the training requirements of physical education teachers in Jordan, in light of the demands of the knowledge economy, are at a moderate level. This finding reflects a mismatch between the current competencies possessed by teachers and the modern skills and knowledge required to address the challenges imposed by the knowledge economy. Teachers' interest in traditional human skills, such as communication, was evident, while a clear weakness was observed in areas related to digital research, intellectual capital development, and the use of modern knowledge tools. The findings also demonstrated that there were no statistically significant differences in the level of training needs attributable to gender or years of experience. This indicates that these training needs are general and comprehensive, encompassing all teachers without discrimination.

Accordingly, the study underscores the necessity of developing specialized training programs that are aligned with the requirements of the knowledge economy. Such programs should prioritize enhancing teachers' competencies in the use of technology and scientific research, as well as fostering creative and critical thinking skills. The study further emphasizes the importance of sustained investment in teachers' professional development through the implementation of strategic training programs designed to ensure that teacher performance remains aligned with contemporary developments, thereby contributing to the improvement of educational quality and the achievement of sustainable societal development.

RECOMMENDATIONS AND SUGGESTIONS:

In light of the study's findings, the following recommendations are proposed:

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

1. The development of tailored training curricula for physical education teachers that emphasize technical and cognitive competencies relevant to the knowledge economy, particularly in the areas of digital research and intellectual capital development.
2. The strengthening of continuous training programs for physical education teachers to ensure that they remain up to date with contemporary technological and cognitive developments, moving beyond reliance on traditional practical experience toward more modern approaches.
3. The integration of competencies related to educational technology and electronic research into foundational training curricula to enable teachers to effectively utilize digital knowledge resources.
4. Raising awareness among physical education teachers of the importance of intellectual capital and its role in supporting educational development and achieving institutional excellence.
5. The unification of teacher training plans to ensure inclusivity across all groups, regardless of gender or years of experience, in light of the convergence of training needs identified in the study.
6. Conducting future studies that focus on evaluating the impact of training programs for physical education teachers within the context of the knowledge economy.
7. Expanding the scope of future research to include teachers from various academic disciplines to enable comparative analysis and identify distinctive characteristics across educational fields.
8. Examining additional factors that may influence training needs, such as teachers' academic backgrounds, prevailing educational environments, and available technological resources.
9. Establishing partnerships between ministries of education and academic institutions to develop innovative training content with a focus on digital literacy and effective communication skills.
10. Encouraging teachers to engage in self-directed continuous learning through open online courses and digital learning resources to enhance autonomy in professional skill development.

ACKNOWLEDGMENT

The researchers extend their sincere appreciation to all individuals who contributed to the completion of this study, particularly the physical education teachers in Jordan who participated in the research.

AUTHORS' NOTE

The authors declare no conflict of interest.

REFERENCES

Ahn, D., & Lim, H. (2025). Exploring K-12 Physical Education Teachers' Perspectives on Opportunities and Challenges of AI Integration Through Ideation Workshops. arXiv.

Akkaya, S. (2021). Technological pedagogical content knowledge as a predictor of physical education and sports teachers' evaluations of distance education. Cypriot Journal of Educational Science, 16(4), 1643–1659.

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

Al-Ghonmeein, J. S. A., & Al-Sa'aida, M. (2023). Training needs in pedagogical content knowledge (PCK) among vocational education teachers in Jordan. Journal of the Islamic University for Educational and Psychological Studies, 31(5), 458–479.

Al-Ghonmeein, J. S. A., Mahasneh, A. M., & Al-Sa'aydeh, M. A. (2024). The reality of implementing the vocational education curriculum in Ma'an Governorate from the teachers' perspective. Journal of the Association of Arab Universities for Research in Higher Education, 44(1), 371–383.

Al-Momani, M. (2016). The effective of training program for the development of knowledge about the national professional standards among the teachers of secondary vocational education in Jordan. International Education Studies, 11(8), 110–127.

Al-Momani, M. O. (2022). Teaching competencies of vocational education teachers in Jordan. Revista Multidisciplinar, 4(1), 151–169.

Amorim, C., & Ribeiro-Silva, E. (2024). Preservice physical education teachers' perceptions of initial teacher education. European Physical Education Review, 31(3), 355–373.

Aparicio-Herguedas, J. L., Fraile-Aranda, A., & Rodríguez-Medina, J. (2023). Teaching skills in physical education teacher training: theoretical and factor models. Humanities and Social Sciences Communications, 10, 12.

Aparicio-Herguedas, J. L., Rodríguez-Medina, J., González-Hernández, J. C., & Fraile-Aranda, A. (2020). Teaching skills assessment in initial teacher training in physical education. Sustainability, 12(22), 9668.

Atabek, O. (2019). Challenges in integrating technology into education. arXiv.

Cañadas, L., Santos-Pastor, M. L., & Castejón, F. J. (2019). Physical education teachers' competencies and assessment in professional practice. Apunts. Educación Física y Deportes, 139, 33–41.

Cho, K., Tsuda, E., & Ward, P. (2024). Developing adaptive teaching competence in preservice physical education teachers. European Physical Education Review, 30(4), 638–649.

Eslami, M., & Vahdani, M. (2024). Designing a needs assessment model for physical education teachers in Iran. Human Resource Management in Sports, 11(2), 295–315.

Farias, C., Teixeira, J., Ribeiro, E., & Mesquita, I. (2022). Effects of a two-stage physical education teacher education programme on preservice teachers' specialised content knowledge and students' game-play in a student-centred sport education-step game approach. European Physical Education Review, 28(3), 816–834.

Fletcher, T., & Beckey, A. (2023). Teaching about planning in pre-service physical education teacher education: A collaborative self-study. European Physical Education Review, 29(3), 389–404.

Gaowgzeh, R. A., Subramanian, S. S., Maayah, M. F., Alfawaz, S. S., Neamatallah, Z., & Altaim, T. A. (2021). Level of knowledge of sports coaches and physical education teachers in

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

physical therapy in Jordan. Journal of Pharmaceutical Research International, 33(56A), 105–112.

García-Cazorla, J., García-González, L., Burgueño, R., Diloy-Peña, S., & Abós, Á. (2024). Factors associated with physical education teachers' teaching style: A circumplex approach. European Physical Education Review, 31(1), 87–108.

Gawrisch, D. P., Richards, K. A. R., & Killian, C. M. (2020). Integrating technology in physical education teacher education: A socialization perspective. Quest, 72(3), 260–277.

González-Rivera, M.-D., Campos-Izquierdo, A., Hall, N. D., & Villalba-Pérez, A. I. (2023). Planning and assessment practices among Spanish physical education teachers according to experience and teaching level. European Physical Education Review, 29(3), 438–454.

Hegarty, B. (2015). Attributes of open pedagogy: A model for using open educational resources. Open Educational Practices.

Herrero-González, D., López-Pastor, V. M., Manrique-Arribas, J. C., & Moura, A. (2023). Formative and shared assessment: Literature review on the main contributions in physical education and physical education teacher education. European Physical Education Review, 30(3), 493–510.

Hizam, S. M., Akter, H., Sentosa, I., & Ahmed, W. (2021). Digital competency of educators in the virtual learning environment: A structural equation modeling analysis. arXiv.

Işıkgöz, M. E. (2024). Traditional classroom management to virtual classroom management: A study on physical education teachers' competencies. SAGE Open, 14(4).

Jawarneh, R. S., Al-Momani, M. O., Alazeez, A. M. A., Theiyabat, E. M., Obeidat, S. S., Obeidat, L. M., & Rababa, E. M. (2025). Training needs of physical education teachers in Jordan and their relationship to various variables. Contemporary Educational Researches Journal, 15(1), 9–22.

Kiremitci, O., Boz, B., & Yıldız Çakır, L. (2023). Job demands-resources model and burnout in physical education teaching: A mixed-method sequential explanatory study. WORK, 76(1), 171–187.

Li, B., & Yang, Z., & Lu, Y. (2025). Characteristics of micro-learning units in college physical education based on improved particle swarm optimization. Intelligent Decision Technologies, 19(4), 2036–2049.

Liu, J., & Keating, X. D. (2021). Development of the pre-service physical education teachers' teacher identity scale. European Physical Education Review, 28(1), 186–204.

López-García, G. D., Carrasco-Poyatos, M., Burgueño, R., & Granero-Gallegos, A. (2023). Relationships between needs satisfaction and the quality of motivation with academic engagement in pre-service physical education teachers. SAGE Open, 13(3).

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

Magallanes, K. J. D., Carreon, M. B. C., Miclat, K. C., Salita, N. V., Sumilhig, G. A., Guevarra, R. C., & Miranda, J. P. P. (2024). Perceived importance of ICT proficiency for teaching, learning, and career progression among physical education teachers in Pampanga. arXiv.

Nascimbeni, F., & Burgos, D. (2016). In search for the open educator: Proposal of a definition and a framework to increase openness adoption among university educators. The International Review of Research in Open and Distributed Learning.

Opstoel, K., Prins, F., Jacobs, F., Haerens, L., van Tartwijk, J., & De Martelaer, K. (2022). Physical education teachers' perceptions and operationalisations of personal and social development goals in primary education. European Physical Education Review, 28(4), 968–984.

Pot, N., Whitehead, M. E., & Durden-Myers, E. J. (2018). Physical literacy from philosophy to practice. Journal of Teaching in Physical Education, 37, 246–251.

Pot, N., Whitehead, M. E., & Durden-Myers, E. J. (2019). A professional development program to enhance primary school teachers' knowledge and operationalization of physical literacy. Journal of Teaching in Physical Education, 38(2), 126–142.

Rababah, O. (2017). Faculty members of the Jordanian public universities training needs in the light of the knowledge economy requirements. International Journal for Research in Education, 41(3), Article 3.

Robinson, D. B., Randall, L., & Barrett, J. (2018). Physical literacy misunderstandings: What do leading physical education teachers know about physical literacy? Journal of Teaching in Physical Education, 37, 288–298.

Romero-Martín, M. R., Castejón-Oliva, F. J., López-Pastor, V. M., & Fraile-Aranda, A. (2017). Evaluación formativa, competencias comunicativas y TIC en la formación del profesorado. Comunicar, 52.

Sakallı, D., & Şenel, E. (2024). The role of marginalisation and role stressors in physical education teachers' perceived mattering. European Physical Education Review, 31(1), 3–17.

Sears, J. A., & Wilson, R. (2024). Issues in staffing and outsourcing in schools: Who's teaching health and physical education? Australian Journal of Education, 68(3), 176–198.

Shearer, C., Goss, H. R., Edwards, L. C., Keegan, R. J., Knowles, Z. R., Boddy, L. M., & Foweather, L. (2018). How is physical literacy defined? A contemporary update. Journal of Teaching in Physical Education, 37, 237–245.

Silva, R., Farias, C., & Mesquita, I. (2021). Challenges faced by preservice and novice teachers in implementing student-centred models: A systematic review. European Physical Education Review, 27(4), 798–816.

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X

Slingerland, M., Weeldenburg, G., & Borghouts, L. (2024). Formative assessment in physical education: Teachers' experiences when designing and implementing formative assessment activities. European Physical Education Review, 30(4), 620–637.

Soini, A., Watt, A., & Sääkslahti, A. (2024). Relationships between pre-service teachers' self-reported physical activity and their perceptions of physical education in early childhood teacher education. European Physical Education Review, 30(4), 529–544.

Tomura, T., Sato, T., Miller, R. T., & Furuta, Y. (2023). Japanese elementary teachers' experiences during online professional development regarding involvement of immigrant parents in physical education. European Physical Education Review, 30(2), 228–249.

Tsangaridou, N., Charalambous, C. Y., & Kyriakides, E. (2023). Preservice classroom teachers' views and experiences of teaching physical education: Does taking a physical education specialization matter? European Physical Education Review, 30(2), 265–282.

Tsangaridou, N., Kyriakides, E., & Charalambous, C. Y. (2021). Investigating preservice classroom teachers' practices and views about teaching physical education lessons: An exploratory case study. European Physical Education Review, 28(2), 414–431.

Tsangaridou, N., Pieroua, M., & Charalambous, C. Y. (2022). An analysis of content development in physical education: Preschool teachers' selection of instructional tasks. European Physical Education Review, 29(1), 91–106.

UNESCO. (2015). World education conference: Incheon declaration – education 2030. UNESCO.

Yang, W., & Li, C. (2024). Quality evaluation of physical education in colleges and universities based on fuzzy logic. Journal of Computational Methods in Sciences and Engineering, 24(1), 165–181.

Yew, M., & Wang, K. (2016). The effectiveness of an autonomy-supportive teaching structure in physical education. Revista Internacional de Ciencias del Deporte, 12(43), 5–28.

DOI: https://doi.org/10.17509/jpjo.v10i2.90019
p- 2085-6180 e- ISSN 2580-071X