

Current training and fostering of physical education teachers following the plan-do-check-act model at Ho Chi Minh City, Vietnam elementary schools

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Abstract

This article explored the current status of physical education teacher (PET) team development in Ho Chi Minh City, Vietnam elementary schools. Awareness of the meaning and significance of developing a PET team; and the current status of training and fostering PETs according to the Plan-Do-Check-Act (PDCA) model were also examined. Data was collected by questionnaire from 522 managers and teachers and by interviews with 30 Ho Chi Minh City elementary school managers and teachers. Results were that PET team development was strongly influenced by internal and external factors, including educational innovation, policy mechanisms, school culture, human issues, cognition, managerial capacity, and teacher individualities. The most significant managerial issue was to control negativity and promote positivity. Simultaneously, managers must constantly improve PET training and fostering to ensure development of sufficient high quality instructors meeting international standards.

Keywords: physical education, physical education teachers, human resources development, Plan-Do-Check-Act (PDCA) model

1. Introduction

In the Vietnamese education system, physical education (PE) is related to intellectual, ethical, aesthetic, and labor education. PE is one of the important contents, contributing to the comprehensive educational goal for students. Currently, PE in schools is a compulsory subject, expressed in education programs of all levels of education, to equip children and students with health and physical skills, forming exercise and living habits to improve health, comprehensive development of quality and stature, and intelligence to improve necessary skills and techniques. Furthermore, PE is important in improving mental health, adaptability, and harmony with living conditions, learning environment conditions, personal labor, and social circumstances (Ministry of Education and Training, 2018). Therefore, improving the quality of PE teachers is even more urgent in bringing physical and mental health to students. It should be noted that improving the quality of PE teachers is not just about improving the quality of PE, it has far-reaching implications for bringing a healthier, happier, more positive, and more effective learning environment for the young generation (Sandra, 2016).

Currently, standard PE programs in many countries emphasize the importance of comprehensive development, including both physical and mental. Each country may have its frameworks, but these basic principles are aimed at students' health and quality of life through PE activities (Kumar, 2018). In Vietnam, PE programs at all levels must meet the requirements of the general education program and approach international standards. Therefore, the need to develop a team of physical education teachers at all levels, especially the elementary level, has become more urgent than ever. At the same time, it is necessary to improve the quality of PE teachers to meet national educational goals and international standards to ensure learning energy and long-term happiness for students. Of course, to achieve this goal, researching the current state of training and fostering PE teachers is the first thing to do. This is the foundation for managers to find effective solutions to develop a team of PE teachers in Ho Chi Minh City, Vietnam to integrate with regional and international standards.

2. Research purposes

This article is aimed at clarifying the following issues:

2.1 Study the theoretical basis for developing the team of PE teachers according to the PDCA model.

2.2 Analyze the current status of training and fostering the development of PE teachers at elementary schools in Ho Chi Minh City according to the PDCA model.

3. Literature review

As you know, PE is integral in fostering comprehensive development among students. Beyond just physical fitness, it serves as a cornerstone for holistic growth, nurturing the body, mind, and character (Ministry of Education and Training, 2018). So, one of the items to practically implement the spirit of Resolution 29-NQ/TW on fundamental and comprehensive innovation in education and training is "*Focusing on intellectual and physical development, forming qualities and capacities citizens, discover and foster talents, and provide career orientation for students*". Moreover, PE and school sports are an important part of the comprehensive educational goals of the Education and Training sector for example: Equip knowledge, and basic movement skills, form exercise habits; Make students do regular exercise and sports; Link physical education and sports in schools with education of will, ethics, lifestyle, and life skills; Meet the needs of healthy entertainment for children, and students, and at the same time, contributes to discovering and training sports talents and talents for the country (Ministry of Education and Training, 2019). Recognizing this important meaning, many domestic and foreign authors are interested in researching PE and developing PE teachers. Madsen et al., (2011) affirmed the importance of PE teachers in providing comprehensive, context-specific, and continuous professional development for teachers. Sandra (2016) emphasized the position of PE in the curriculum. Minh (2022) considered promoting and diversifying forms of propaganda and education about the role and meaning of PE right from the elementary level because they are indispensable in developing skills and fostering skills and qualities to meet the goal of comprehensive education for students from the smallest levels. Yaakop et al., (2023) stated exploring global trends in effective PE programs and innovative curricula that are key factors contributing to PE teachers' professional development and improved student learning outcomes.

Regarding research approaches, there have been many studies on the issue of developing elementary PE teachers following many approaches such as human resource development. Based on the development and management of human resources, Mello (2015) proposed team development based on human resource development management with 02 main contents: (1) Potential management and competency-based skills include: Training management, continuing education, and refresher training; (2) Managing exploitation potential according to capacity includes: Managing assessment of potential and implementation capacity; Recruit, arrange and use according to capacity; Environmental management and motivation

of work. Desler (2013) considers human resource management as a process that includes many stages from planning, selection, evaluation, compensation, development, communication, and participation. Beardwell et al., (2014) affirmed the close relationship between human resource management activities and four factors: selection, evaluation, development, and promotion. Human resource management according to this model focuses on selection based on demonstrating the interests of stakeholders and the actual situation. Mello (2015) also emphasizes the role of organizational culture and environment in human resource management such as planning, selection, selection, organization and job design, training and development, labor evaluation, and compensation.

In the process of developing the team of PE teachers according to the development human resources approach, educational researchers believe that managers need to do and pay attention to the following factors:

1) Training and fostering not only help each member improve, and have opportunities for advancement but also the development of each educational institution itself in the innovation trend of the international education system. In education, the management of fostering and developing teachers' professional capacity is the impact of the management entity on the training of teachers to develop their professional capacity (Beardwell et al., 2014). Training and fostering teachers is the process of influencing each teacher to help them acquire and master knowledge, skills, and techniques in a systematic way to change awareness and behavior, skills, and attitudes of members of the teaching staff to meet the need to improve the quality of the teaching staff (Loc Nguyen Thi My, 2012). On the other hand, training and fostering is the process of updating knowledge, fostering and improving skills and methods of performing assigned tasks; and contributing to building the team with professional ethics, sufficient qualifications, and professional capacity to ensure the quality of professional activities (Prime Minister, 2016).

2) Implement policies and regimes of working conditions and environment for PE teachers: Remuneration and working environment conditions to encourage all members to contribute better in carrying out the school's tasks. A good regime, remuneration policy, and working environment will be effective management tools during the innovation period. Implementing remuneration and building a working environment is the process of implementing regulations and policies of the state and the school itself to each member and that also affects the relationship between the government and the school and relationships

between individuals, groups, and organizations. to create the best working motivation for all members by addressing material and spiritual benefits for employees (Morgan & Hansen, 2008).

In the trend of constant development and educational innovation, managers need to implement effective solutions to develop the team of PE teachers. Particularly, to ensure educational innovation activities, especially the development of PE teachers, it is necessary to define a clear management model. Today, applying management models in education is a progressive trend worldwide, including in Vietnam. Many management models have been and are being applied, including the management model according to the AUN-QA quality assurance method (ASEAN University Network - Quality Assurance) or the management model according to the CIPO method. (Context - Input - Process - Output) or the PDCA (Plan – Do – Check - Act) model for continuous improvement and quality management (Li et al., 2014). According to Sokovic et al (2010), using the PDCA cycle means continuously searching for better methods of improvement. The PDCA cycle is effective in both performing an improved process and managing activities in schools. PDCA is not just an encouragement to develop breakthrough changes but also helps manage change effectively. One of the outstanding factors of this approach is quality management through the continuous feedback loop of PDCA. Applying the PDCA model helps establish a plan, collect, and analyze data to make predictions, and overcome limitations to reduce deviations between the current status and goals desired target. Darling-Hammond et al., (2017) highlighted the effectiveness of ongoing professional development for teachers, facilitated by models like PDCA, in improving teaching practices and student outcomes. A study by Sun et al., (2022) demonstrated how the PDCA model helps in the iterative design and refinement of curricula to better meet student needs and educational standards. Huan and Nasri (2022) emphasized the PDCA model is a cyclic approach that is highly effective for continuous improvement and quality management. Luo and Kim (2023) confirm using the PDCA cycle in school improvement plans, showing how iterative processes lead to significant improvements in student performance and school operations.

Based on this theoretical basis, within the scope of the article's research, the authors identify and select the PDCA model to develop the team of PE teachers in elementary schools. because of the outstanding and unique aspects of applying the PDCA model in teachers' development such as 1) Systematic approach: The PDCA model provides a structured and systematic approach to professional development, ensuring that improvements are

planned, executed, monitored, and refined in a continuous loop; 2) Data-Driven Decisions: By emphasizing data collection and analysis, the PDCA model ensures that decisions regarding teachers' development are evidence-based and targeted to address specific needs; 3) Stakeholder Involvement: Engaging stakeholders throughout the PDCA cycle ensures that the professional development programs are relevant, supported, and sustainable; 4) Flexibility and Adaptability: The iterative nature of the PDCA model allows for flexibility and adaptability, enabling quick responses to feedback and changing needs in the educational environment; 5) Scalability: The model's emphasis on pilot testing and scaling successful programs ensures that improvements can be systematically expanded to benefit a larger population of teachers and students at other areas. In short, by applying the PDCA model, developing and evaluating the quality of teachers in general and physical education teachers in particular becomes a dynamic and constantly improving process. The result of the process is to create a team of physical education teachers with sufficient quantity and quality to meet the trend of internationalization and global integration.

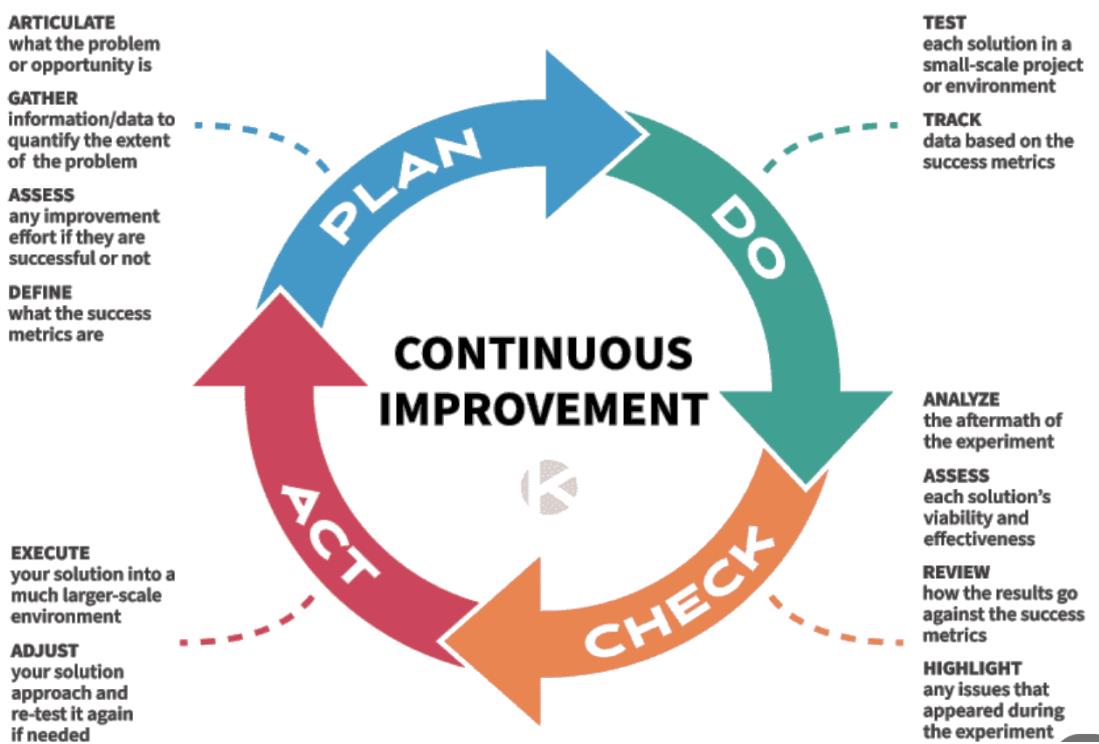


Figure 1 The PDCA cycle

Source: Boiser, (2021). *The PDCA Cycle: What is it and Why You Should Use it.*

Kanban Zone. <https://kanbanzone.com/2021/what-is-pdca-cycle/>

4. Research methodology

4.1 Research design

This research is a combination of quantitative and qualitative methods to combine the advantages of quantitative and qualitative research. In particular, quantitative data are survey results through a set of questions applied from the beginning of the study to survey 522 managers and teachers. Then, qualitative data is based on the results of interviews with 30 managers and teachers to help clarify the data obtained as well as express managers' opinions. In addition, the authors use necessary information records from educational activity products and reference materials of educational managers related to scientific reports and management models. All of these are considered the theoretical basis of the research topic.

4.2 Data analysis

This study was limited to primary schools in Ho Chi Minh City, Vietnam. In terms of sample size, a total of 522 respondents including principals, technical vice principals, administrative vice principals, professional staff of the education department, and PE teachers were selected using a sampling process stratified simple randomization. The authors used a structured closed-ended questionnaire and a 5-level Likert scale to collect survey data. To process and analyze data, the authors used SPSS software for descriptive statistics, reliability testing, and correlation testing between independent and dependent variables.

For quantitative data: The questionnaire survey was designed with questions about training and fostering activities for PE teachers at elementary schools in Ho Chi Minh City, Vietnam; For qualitative data: The author collected qualitative data through interviews with 30 managers and PE teachers using semi-structured interview questions to clarify quantitative data.

5. Findings and discussion

5.1 Developing the team of elementary physical education teachers based on the PDCA model

On the theoretical basis and with the outstanding advantages of the PDCA cycle as analyzed, the authors propose to apply the PDCA cycle as an effective tool for the education sector to develop the team of PE teachers at elementary schools. Accordingly, elementary school facilities apply the sequential steps of the PDCA cycle to build specific content to operate in the practice of developing elementary PE teachers. This model can be applied to

the entire PE teacher development process or individual parts of the process. Developing the team of PE teachers according to the PDCA model is specifically explained as follows:

5.1.1 Plan

Based on the mission, strategy, and staff development policy of the elementary school facilities, the principals direct the development of a plan to develop PE teachers through tasks such as: Analyzing and collecting necessary information and data to see the overall and detailed current status of developing of team PE teachers; Identifying relevant issues need to solve (in terms of quantity, quality, management capacity...), thereby setting specific quantitative and qualitative goals to be achieved; Determining work content, and methods of implementation; On this basis, identifying a system of tools for implementation: regulations, processes, instructions, forms... and determining the existing and necessary conditions in terms of human resources, material resources, financial resources, information to achieve the set goals. Building estimated organizational structure and assigning functions and tasks to departments and individuals participating in implementation such as: Determining working mechanism, implementation process, and roadmap for good implementation and completion deadline; Estimated expected results of the development of physical education teachers; Identifying qualitative and quantitative indicators and indicators as criteria to measure and evaluate the level of success in the development of physical education teachers; Publishing the entire plan to inform relevant partners to coordinate implementation.

5.1.2 Do

Promulgating a system of internal processes and regulations to guide the implementation of developing the team of PE teachers, including instructions for implementing training and evaluating PE teachers; Announced publicly for members to easily access and grasp information. Organizing dissemination of plans and training on the implementation of processes and regulations on developing of team of PE teachers to all PE teachers and implement; Training specialized team leaders for implementation. Developing a team of PE teachers to be successful, requires the efforts and serious participation of all members of the PE team; At the same time, it is necessary to ensure clear work assignments with specific responsibilities and authorities for each relevant department and individual to perform; Organizing work implementation according to plan; standardizing jobs; Monitoring and recording the progress of the implementation process, storing relevant figures and data, receiving feedback from relevant parties during the task implementation process to serve inspection activities, and future evaluation.

5.1.3 Check

Collecting results of implementation including reports, data, figures, and feedback from relevant partners recorded during the implementation process. During the process of inspecting, elementary school establishments should pay attention to applying self-assessment to individuals participating in PE development activities, and at the same time can use different evaluation methods and evaluate different contents to ensure objectivity and comprehensiveness such as systematic evaluation; Evaluating the process, evaluating the organizational work of the team, evaluating factors, and collecting feedback from relevant partners as a basis for evaluating the activities developing the team of PE teachers. Then, measuring, analyzing, and evaluating achieved results compared to set goals.

5.1.4 Act

Comparing the results of inspection and evaluation with set goals: building a plan to implement a new cycle with new input information; For work that has not achieved the goal: return to the planning step, and adjust relevant content and activities to carry out next time. When implementing corrective actions, it is necessary to pay attention to applying preventative measures to avoid repeating the detected inadequacies, and at the same time eliminating the causative factors to improve the detection work. develop PE teachers more effectively. In general, based on the general cycle of developing the team of elementary PE teachers according to the PDCA model, the component activities of training and evaluating the results of performing the tasks of elementary PE teachers are also specified according to the PDCA model steps as follows:

Table 1 The general cycle of developing a team of PE teachers according to the PDCA model

PDCA cycle	Training and fostering	Evaluation	Building environment
Plan	<ul style="list-style-type: none"> - Based on the strategy and human resource development policy, the principal leads the school facility to develop a training plan, evaluate, and evaluate the actual environmental situation and policy regime for the physical education teachers. - Review the current situation of urban development, assessment, environment, and policies for PE teachers: identify problems to solve 		<ul style="list-style-type: none"> - Define goals (ensure SMART criteria)

PDCA cycle	Training and fostering	Evaluation	Building environment
	<ul style="list-style-type: none"> - Training and fostering to develop the quality of PE teachers: improving qualifications, knowledge, skills, attitudes; quantity and content of training courses; Number of PE teachers participating and completing... 	<ul style="list-style-type: none"> - Evaluating the performance of PE teachers' tasks; From there, there is a plan to develop PE teachers following the school's goals. 	<ul style="list-style-type: none"> - Directing the construction of conditions for equipment, facilities, space, and tools necessary for teaching work; Directing the construction of a development environment inside and outside the school; Complete the policy mechanism for developing elementary PE teachers according to industry and local regulations
- Determining content and implementation method			
	<p><i>Determining content, program, training process, and organizational forms:</i></p> <ul style="list-style-type: none"> - Subjects and standards for participating PE teachers; Tool system: implementation documents, regulations, processes, forms, instructions; - Assign responsibilities and train the implementation team: experts/lecturers/reporters, administrative and technical teams; - Conditions of facilities and supporting equipment; class management work; Time, location... 	<p><i>Assign responsibilities and organize implementation resources:</i></p> <ul style="list-style-type: none"> - Organize evaluation of work results of PE teachers based on analysis of information and data on practical performance results compared with set goals and standards; - Compare the results of completed work of assigned individuals with the purposes, requirements, and standards that have been determined for physical education teachers. 	<p><i>Assign responsibilities and organize implementation resources:</i></p> <ul style="list-style-type: none"> - Organizing evaluation of work results of PE teachers based on analysis of information and data on practical performance results compared with set goals and standards; - Comparing the results of completed work of assigned individuals with the purposes, requirements, and standards that have been determined for physical education teachers. - Evaluation is based on the responsibilities and duties of PE teachers to create elements of objectivity and fairness; Evaluation can be through soliciting opinions

PDCA cycle	Training and fostering	Evaluation	Building environment
		create elements of objectivity and fairness; Evaluation can be through soliciting opinions from relevant parties about the capacity and qualities of PE teachers	from relevant parties about the capacity and qualities of PE teachers
Do	Record all progress and implementation processes; Standardize performed work; Recommend conditions for improvement, change, and adjustment to improve work quality and efficiency		
Check	<ul style="list-style-type: none"> - Collect, synthesize, make statistics, measure, and evaluate the results of training PE teachers through monitoring and controlling records and obtaining opinions from relevant partners. - <i>Check and evaluate achieved results compared to set goals:</i> Check job content; Check the implementation of each step, each content, and check the overall process; Consider the advantages, shortcomings, and inadequacies and determine the causes to have plans for adjustment and improvement; Communicate the results of training and evaluation, build an environment and policies for PE teachers to relevant partners in the school. 		
Act	<ul style="list-style-type: none"> - <i>For work to achieve goals:</i> Plan to implement the training cycle, and evaluate PE teachers with new input information. - <i>For work that has not achieved its goals:</i> Make plans to adjust and improve relevant content (work content, organization, tools, task assignment, resource allocation, time...) to carry out training and evaluation; Building the environment and policy regime for PE teachers in the next year 		

In general, this study builds on previous research on PE teacher development. The difference is that the PDCA model is implemented in a four-phase cycle and within each phase. That provides administrators with a structured approach to solving challenges in training and fostering PE teachers as soon as possible. Specifically, the PDCA model addresses the challenges of developing PE teachers summarized by the following steps. First, principals begin with a comprehensive needs assessment to identify specific gaps in teacher skills and knowledge; Goals are set based on these assessments, ensuring that professional development programs are tailored to meet the diverse needs of PE teachers and their students such as training materials and expert facilitators, are planned and allocated to ensure the effectiveness of professional development initiatives; Planning includes the integration of technology in PE,

such as fitness tracking devices and online training modules, to enhance teaching and learning experiences. Second, PE teachers engage in hands-on training that focuses on practical skills, such as injury prevention, effective exercise routines, and adaptive physical education for students with disabilities. The implementation phase encourages collaborative learning through workshops, seminars, and peer coaching, fostering a supportive professional community. New training methods and curricula are tested in pilot programs, allowing for real-time adjustments based on immediate feedback from participants. These pilots enable iterative refinement of the training programs, ensuring they are effective and well-received before broader implementation. Third, key performance indicators (KPIs) such as student fitness levels, teacher competency, and student engagement in PE are monitored to assess the effectiveness of training programs. Regular feedback is gathered from teachers, students, and other stakeholders through surveys, interviews, and classroom observations to evaluate the impact of professional development initiatives. Both quantitative data (e.g., student fitness scores) and qualitative data (e.g., teacher and student feedback) are analyzed to gain a comprehensive understanding of the program's effectiveness. The results are compared against national and international standards to ensure that the PE programs meet or exceed quality benchmarks. Finally, based on the evaluation data, specific adjustments are made to the training programs to address identified weaknesses and build on strengths. Successful pilot programs are scaled up to a broader range of schools and districts, ensuring that more PE teachers benefit from the improved training initiatives. The PDCA model is repeated to ensure ongoing improvement, adapting to new challenges and incorporating the latest research and educational standards. In the context of educational innovation, the PDCA model addresses specific challenges by providing a framework for needs assessment, targeted training, systematic evaluation, and responsive adjustments in each stage of the Plan, Do, Check, Act to make continuous improvements and implement the new PDCA cycle.

5.2 Current status of developing the team of physical education teachers according to the PDCA model at elementary schools in Ho Chi Minh City, Vietnam

5.2.1 The importance of developing a team of physical education teachers according to the PDCA model at elementary schools in Ho Chi Minh City, Vietnam

Through survey statistics, the authors obtained the results in Table 2 below.

Table 2 Current status and importance of developing a team of PE teachers

Content	Mean		Standard Deviation	
	Managers	Teachers	Managers	Teachers
Help improve working capacity, knowledge, and professional skills to perform assigned tasks well	4.64	4.64	0.481	0.480
Contribute to improving the quality of professional human resources, perfecting the school's operating mechanism to achieve set goals.	4.68	4.68	0.466	0.466
Contribute to improving the schools' educational quality	4.70	4.70	0.460	0.458
Contribute to the results and achievements of schools' activities	4.74	4.75	0.439	0.433
The server school's development goal	4.74	4.74	0.441	0.440
Contribute to improving the quality of teaching, attracting students to practice and be aware of self-improvement in physical education	4.71	4.72	0.455	0.452
Overall average	4.70	4.71	0.191	0.188

Source: From the authors' analysis of survey data

Table 2 shows that both administrators and teachers have a fairly high awareness of the importance of developing a team of PE teachers. The overall average value of the 6 factors recorded is quite high and there is a negligible difference between managers and teachers ($M = 4.70$, $SD = 0.191$); ($M = 4.71$, $SD = 0.188$). Among them, the highest-rated factors are “Contribute to the results and achievements of schools' activities” ($M = 4.74$, $SD = 0.439$); ($M = 4.75$, $SD = 0.433$) and “Server school's development goal” ($M = 4.74$, $SD = 0.441$); ($M = 4.74$, $SD = 0.440$) and the lowest-rated factor is “Help improve working capacity, knowledge, and professional skills to perform assigned tasks well” ($M = 4.64$, $SD = 0.481$); ($M = 4.64$, $SD = 0.480$).

To further clarify the above issue, the authors interviewed some managers and PE teachers and recorded some feedback as Manager 1 said:

“PE teachers play an important and decisive role in the quality of education, helping students have good health and a sense of self-improvement. practice, helping students to be more active and confident when participating in learning activities, promoting creativity and thinking in studying”

Manager 2 considered:

“PE teachers also help students get sports achievements that contribute to building the school’s reputation”.

Especially, many PE teachers agreed with Teacher 1’s opinion:

“The team of PE teachers has an important role in educating students to practice and improve their health as well as building good quality teaching hours to help students learn. Students are interested in learning and practicing, contributing to the overall educational quality of the school”.

So, it can be seen that the results achieved according to the assessments of managers and teachers also coincide with the theoretical basis of the importance of developing the team of PE teachers (Sandra, 2016). If this team is well developed, it will help PE teachers improve their working capacity, knowledge, and professional skills to perform assigned tasks well and improve the quality of professional human resources to achieve set goals.

5.2.2 Current status of training and fostering the development of physical education teachers at elementary schools in Ho Chi Minh City according to the PDCA model.

Training and fostering are important methods to develop a team of PE teachers in elementary schools and the principal is responsible for planning, organizing, directing, implementing, and evaluating this work. Through training, PE teachers are provided and updated with knowledge, skills, and attitudes to form appropriate essential competencies, which not only help complete their tasks but can also create a difference in work performance, creating outstanding school achievements. Refresher training at general education establishments often includes the implementation of prescribed training regimes and training according to the actual needs of the school. After surveying the opinions of the research subjects on the level of performance and level of achievement of the training and fostering of the current team of PE teachers at units following the PDCA model as shown in Table 3.

Table 3 Current status of training, fostering of developing physical education teachers

Training and fostering activities for PE teachers	The Level of Implementation (I)/Achievement (A)	Mean	Standard Deviation	Ranking
The principal develops training and fostering plans for PE teachers based on the school's general human resource development strategy and policy to propose to superiors.	I	4.06	0.332	2
	A	2.65	0.634	4
The principal develops a schedule plan to achieve the training goal	I	4.16	0.636	1
	A	3.20	0.805	1
The principal develops a plan to evaluate the level of success of training activities through each stage	I	3.97	0.629	4
	A	2.75	0.802	3
The principal establishes a plan to manage the synchronization between training and use	I	4.06	0.563	2
	A	2.82	0.662	2
Overall Mean (Plan)	Implementation Achievement	4.06 2.85	0.369 0.418	
The principal assigns personnel responsibilities to participate in the training and fostering of PE teachers	I	4.12	0.507	1
	A	2.80	0.679	7
The principal coordinates with the Department of Education to be in charge of training and development to carry out assigned tasks	I	3.95	0.403	6
	A	4.07	0.444	1
All levels of managers participate in coordinating the training of elementary PE teachers	I	3.92	0.632	7
	A	4.06	0.458	2
The principal notifies the pedagogical council and relevant teachers for implementation	I	4.02	0.478	4
	A	4.04	0.472	2
The principal collects opinions on the training and fostering needs of elementary PE teachers	I	3.88	0.621	8
	A	4.04	0.478	3
The principal creates conditions for PE teachers to participate in training and fostering	I	4.02	0.444	4
	A	4.03	0.491	5
The principal seeks feedback from primary education teachers on the training program for primary education teachers to complete it.	I	4.07	0.451	3
	A	3.10	0.854	6
The principal assigns retraining and training to raise standards	I	4.12	0.519	1
	A	2.60	0.618	8
Overall Mean (Do)	Implementation Achievement	4.01 3.59	0.308 0.392	

Training and fostering activities for PE teachers	The Level of Implementation (I)/Achievement (A)	Mean	Standard Deviation	Ranking
The principal periodically reviews the implementation of the training plan	I	4.18	0.473	1
	A	4.09	0.413	1
The principal periodically reviews and evaluates training results compared to set goals	I	4.03	0.432	4
	A	2.75	0.671	4
The principal conducts surveys to re-evaluate teachers' abilities accurately and objectively.	I	4.04	0.561	3
	A	2.79	0.682	3
The principal compares and contrasts the old and new educational programs to outline directions for PE teachers	I	3.98	0.692	5
	A	4.09	0.413	1
The principal checks the content of training and development connected to the goal of developing PE teachers	I	4.08	0.497	2
	A	2.69	0.797	5
Overall Mean (Check)	Implementation Achievement	4.06 3.59	0.367 0.392	
The principal periodically adjusts, updates, and improves training activities and programs	I	3.93	0.644	4
	A	2.74	0.691	3
The principal orients timely training on the new textbook program	I	4.00	0.416	2
	A	3.83	0.871	1
The principal orients the application of new programs to teaching to help teachers practice	I	3.83	0.590	5
	A	2.68	0.862	4
The principal improves teaching methods according to a centered-learner orientation and promotes self-directed learning	I	3.97	0.410	3
	A	2.60	0.618	5
The principal advises on improving District topics so that teachers have the opportunity to experiment and receive constructive evaluation	I	4.10	0.529	1
	A	2.78	0.703	2
Overall Mean (Act)	Implementation Achievement	3.97 2.79	0.356 0.418	
Overall Mean PDCA	Implementation Achievement	4.03 3.21	0.310 0.345	

Source: From the authors' analysis of survey data

As shown in Table 3, the implementation of training and fostering PE teachers is not synchronized in the stages of organization and implementation, that is still stereotypical and formal. The overall average results show no significant difference in evaluating the results of the 4 stages according to the PDCA model. The overall average score of the 4 stages is 4.03 and each stage has a value from 3.97 to 4.06, in which the improvement stage (A) is the lowest value ($M = 3.97$, $SD = 0.356$). So, the authors further clarified this data through interviews and recorded the following opinions: Regarding managers, manager 3 said that:

“Managers have regularly implemented plans to develop PE teachers according to the school’s general plan based on the progress and needs of the unit.”

Besides, the author also obtained results on the level of achievement in evaluating the development of PE teachers in Ho Chi Minh City currently according to the PDCA model, only reaching an average from 2.79 to 3.59. In which the improvement phase (A) has the lowest average level of 2.79 ($SD = 0.418$). So, the authors conducted interviews with managers and PE teachers to find out specific reasons.

To serve as a basis for improving this situation, the author interviewed several managers and PE teachers and recorded some opinions such as:

“The current policy does not ensure training and fostering such as financial resources and physical facilities”. (Manager 4)

Manager 5 emphasized:

“Currently, the plan to evaluate and develop PE teachers is not as good as the regular plan. The annual review of this team does not focus on recruiting more teachers while there is still a shortage of teachers compared to the ratio of classes in the unit”.

Teacher 2 considered:

“The school does not complete the reward and motivation regimes and the way to evaluate teachers who complete their tasks is still inadequate, and building school culture in supporting and sharing work to complete tasks is not demonstrated well”.

Teacher 3 stated:

“Developing the team of PE teachers needs to be implemented by the Principals with all teachers in the school, in coordination with relevant partners to create conditions for PE teachers to have the opportunity to learn, practice, improve skills and expertise, and often collect PE teachers’ feedback to promptly respond appropriately to facility conditions”.

Teacher 4 added:

“The school has not focused on evaluating good teachers for PE teachers, and the evaluation criteria are not suitable for each specific subject even though they have brought many overall achievements to the school”.

In addition, teachers' and managers' opinions show that although training has been implemented, this work has not been organized and coordinated synchronously, and formally.

Generally, the above results show that the level of assessment of the development of physical education teachers in the current unit is only achieved at an average level, there are still many limitations in the planning stage, and assessment tools are not guaranteed. reliability. The organization, direction, and review of planning implementation steps are not good. Data shown through the stages of planning, implementation, inspection, and improvement of results achieved when implementing general teacher training mostly reveal certain limitations. The most worrying thing is that the implementation of training and fostering sports teachers has reached a good level, but the actual results achieved in most remaining stages are only average. Therefore, the effectiveness of development work between implementation and achievement is not synchronous, scientific, and practically effective. At the same time, managers must develop appropriate policies and tools to evaluate the training and fostering of PE teachers to ensure reliability, objectivity, and science. In other words, the better the quality of PE teachers, the higher the academic performance of students.

To evaluate the degree of correlation and statistical significance of the results collected from implementation results and the achievement results in the current training and fostering of PE teachers, the author conducted a test of the level of correlation between them as shown in Table 4.

Table 4 The correlation coefficient between the level of implementation and the level of achievement in training and fostering PE teachers according to the PDCA model

Steps in the PDCA cycle	Pearson correlation coefficient	Probability value (Sig.)
P (Plan)	0.516**	0.000
D (Do)	0.623**	0.000
C (Check)	0.594**	0.000
A (Act)	0.745**	0.000

** Correlation coefficients are significant at the 99% confidence level.

Source: From the authors' analysis of survey data

Through the statistical results of the correlation between the level of implementation and the level of achievement of the training and fostering of elementary PE teachers at the P-D-C-A stages, the authors receive correlation coefficients from 0.516 to $0.745 > 0.5$, showing that strong correlation level. At the same time, with a value of $\text{sig} = 0.000 < 0.01$, the correlation coefficient is significant at the 99% confidence level. This proves the data collected from the level of implementation and level of achievement of the work of training and fostering PE teachers are statistically significant. Based on the research questions and research results, the authors make a general assessment of the current development of the team of PE teachers in Ho Chi Minh City as follows:

Strength: By analyzing the current situation, training and fostering a team of PE teachers at elementary schools in Ho Chi Minh City is carried out rather well. It can be seen that the training planning phase has been implemented relatively well regularly. The school principal has developed a human resource development plan, and implementation progress, evaluated the level of success of each stage, and synchronously managed training and use of human resources at the unit. The organization and implementation of work demonstrated by the Principal demonstrates democracy in soliciting opinions on the needs of PE teachers, creating conditions for PE teachers to participate, and at the same time coordinating with other units in training to ensure educational quality. Moreover, the principal also asks for feedback from PE teachers to promptly complete the training program as well as train and foster to improve standards. However, the assessment results only reached the average level, with only a few factors reaching a good level. This is the problem that managers need to pay attention to overcome difficulties and find effective solutions.

Limit: The current development of a team of elementary PE teachers is still limited to the stage of developing inspection plans and evaluating. Team's development, goals, and ability to complete tasks that have not been quantified and detail planned. Besides, periodic evaluation, evaluation process, and implementation conditions are not well guaranteed. The assessment tools do not ensure good reliability or science. Moreover, collecting opinions between the partners is still carried out poorly, evaluating the implementation of tasks is still formal and is not objective or complete. The principal's direction in organizing inspection activities and the team's development assessment is not good. In addition, adjusting, supplementing, and improving the assessment has not yet been implemented, the assessment standards are not appropriate, and the assessment process is not closed to ensure fairness and accuracy.

6. Conclusion

This study shows that applying the PDCA model to training and coaching physical education teachers has initially achieved certain results. These findings show that the implementation of the PDCA phase needs to be based on specific conditions and context to select and prioritize the implementation of priority items accordingly to bring the best results. In particular, improvements in teacher training and education can be done as follows: 1) Plan: Identify clear training goals, such as improving physical education teaching skills, developing new teaching methods, or improving professional knowledge; Plan detailed training activities, including content, methods, time, location, and required resources; Build an evaluation system to monitor the progress and effectiveness of the training program; 2) Do: Carry out training activities according to the proposed plan; Use diverse methods to convey knowledge and skills to teachers, such as presentations, practice, group discussions, and learning from colleagues; Create opportunities for teachers to practice new skills in real-life environments, such as participating in sample lessons, or teaching real students; 3) Check: Evaluate the progress and effectiveness of the training program by gathering feedback from teachers, students, and experts; Analyze data to identify strengths, weaknesses, and problems that should be fixed; 4) Act: Adjust training plans based on assessment results; Develop solutions to overcome limitations and promote the strengths of the training program; Continue to monitor and evaluate the effectiveness of the training program over a long period, make new PDCA circle. By incorporating these strategies into developing a team of PE teachers,

educational institutions can achieve the goal of comprehensive education, ensuring students' health and positive learning energy. In conclusion, this study highlights the effectiveness of applying PDCA in training and fostering a team of qualified PE teachers to meet the globalization trend. However, there is also a need for further research at all educational levels and to expand the research space so that research results can be more widely applied in practice.

7. Recommendations

The PDCA cycle is a continuous improvement process that can be effectively applied to foster and train physical education (PE) teachers. Therefore, its implementation as well as its potential for expansion and replication in different educational contexts around the world have been confirmed by the following authors in research works. For example, Yaakop et al., (2023) considered: "The PDCA cycle is a continuous improvement process that can be effectively applied to foster and train PE teachers". This also coincides with Sandra's opinion that PE teachers have an important role and position right from the elementary level, so they need to develop both training and professional development for quality and quantity. The findings of this study show that applying the PDCA cycle to develop a team of elementary PE teachers involves a structured approach to improving teaching practices, enhancing student outcomes, and fostering professional growth (Sandra, 2016).

From the theoretical basis and findings of the current situation of training and fostering PE teachers at elementary schools in Ho Chi Minh City, Vietnam, the authors have a basis to propose several solutions such as 1) Raising awareness among managers and teachers about the importance of team development for elementary PE teachers; 2) Organizing training and fostering for improvement the quality of elementary physical education teachers according to professional capacity; 3) Strengthen the assessment of physical education teachers and professional testing and examination in primary schools; 4) Building an environment and create motivation for elementary school PE teachers to develop; 5) Building organizational culture in schools regarding physical education. It should be noted that these solutions need to be implemented with mutual support and flexibly applied depending on local, national, or school realities. In this way, fostering and training PE teachers will be improved. Thus, developing a team of PE teachers that meet professional standards and international integration expertise.

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