

The Model for Physical Education Pedagogic Management of the 21st Century Teachers for Primary-Level Students Affiliated with Buriram Primary Educational Service Area Office 3

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ABSTRACT

This research was to study and compare Physical Education (PE) pedagogic management of the 21st century-teachers for primary-level students affiliated with Buriram Primary Educational Service Area Office 3. A sample group used in the study consisted of 312 PE teachers in primary level. Research instrument was composed of questionnaire regarding PE pedagogic management of the 21st century-teachers with 4 aspects: pedagogic management; teacher's characteristics; location, media, and learning materials; and assessment and evaluation. The findings revealed that all 4 aspects of the model were at a high level. PE teachers with different gender had PE pedagogic management in the 21st century with no statistical significance at the level of .05. In addition, PE teachers with different age, education background, and work experience had pedagogic management with statistical significance at a level of .05.

Keywords: pedagogic management, Physical Education, 21st Century

INTRODUCTION

Learning in the 21st century, a teacher needs to change role to be a creator to facilitate students' learning, so that they can learn by doing and their learning would be created from their minds and brains (Phanich, 2012:16-17). The model for pedagogic management aiming to improve the learners to gain the 21st century skills: 3Rs+8Cs; Reading; Writing; and Arithmetic. 8Cs skill refers to critical thinking and problem solving, creativity and innovation, cross-cultural understanding, collaboration teamwork and leadership, communication, information and media literacy, computing and ICT literacy, career and learning skills, including compassion (Office of the Educational Council, 2016: 10-12; Panich, 2013: 15-17; & Chalarak, 2015: 56).

PE pedagogic management is another field aiming the learners gain improvement in terms of physical, mental, emotion. Social, and intellectual aspects. Also, they are able to live in the society happily. Planning integrated PE pedagogic management emphasizes on the highest benefit of PE. Connection of various sciences helps the learners deeply learn in holistic format in order to improve as new knowledge which is important and beneficial to PE (Suksai, 2018: 16). PE course is just as important to the development of learners as other school subjects; however, it needs to be well planned and organized, including being used to provide teaching and learning as well (Kunapisit, 2018: 120). A good PE learning process in the 21st century must be organized into a variety of processes and there is continuity and appropriateness to the level of competence, needs, and interests of learners. In addition, there is a focus on the development of critical thinking, decision making, and problem solving by allowing the students to learn about themselves, to understand nature and life, to know and understand themselves, and to realize the value of oneself and others (Orathai, 2020: Online). PE pedagogic management has found problems affecting learners' learning regarding pedagogic management that does not support the characteristics of learners in the 21st century. These include teachers lacking a variety of teaching techniques and a lack of understanding about pedagogic management in the 21st century. Equipment, places, and facilities are not ready in terms of tools, materials, media, and places used in learning. Problems in assessment and evaluation have not been covered in every skill (Kantima-assajan, 2018: 93-97). Moreover, the curriculum and teaching and learning activities of PE did not keep up with the changes of the era, making the students

bored. These problems would inevitably affect the quality of the learners. and the quality of children and youth in Thailand (Suksai, 2018: 13).

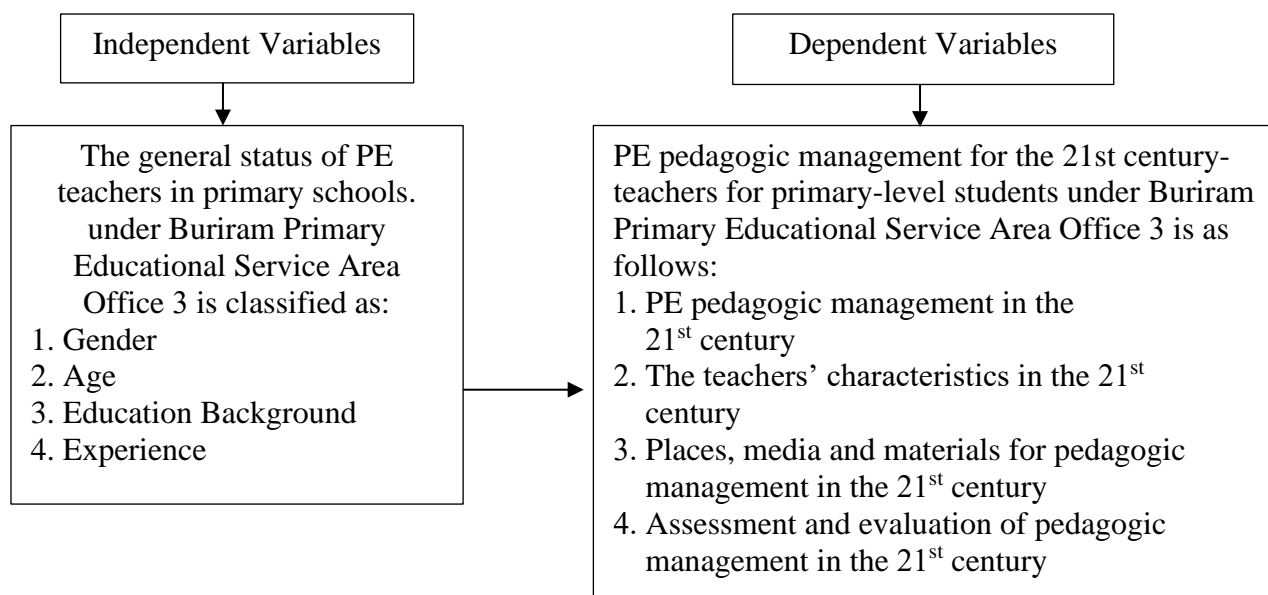
Effective PE pedagogic management in the 21st century requires many factors, whether they are curriculum and content, pedagogic management, teachers' characteristics, places, materials, including assessment and evaluation. Therefore, the researcher is interested in studying PE pedagogic management of the 21st century-teachers for primary-level students as a guideline for problem solving. It also helps administrators or those who are involved in education in all parties are aware of the problems and have information to use as a guideline to solve the problem further.

LITERATURE REVIEW

Teaching PE in the 21st century is an essential part of the curriculum to help learners grow and develop according to the goals specified by the schools (Winnick & Porretta, 2018: 25). It is an educational process that uses selected sports or exercise activities as learning media to obtain results that will help individuals develop physically, mentally, emotionally and socially. (Pianchob, 2018: 85-86). Also, they have better performance to be able to live in today's society well and effectively (Chaemthong, 2013: 11) that conveys knowledge about sports and exercise, including morality, ethics, and sportsmanship. Learners can apply the knowledge gained in daily life (Songsakchai, 2016: 9).

In accordance with guidelines for PE pedagogic management in school, schools must arrange the curriculum to be related with current conditions, local problems and learners' needs. There should be the use of the curriculum so that the learners can achieve the expected results of the curriculum, to make the learners learn, have experiences, attitudes and behaviors as specified by teachers effectively by using various appropriate and consistent teaching and learning processes with the learners' needs, consisting of 4 aspects: teaching and teaching techniques, teacher's personality, teaching media, and assessment and evaluation (Suwannasathitkorn, 2014: 7). PE pedagogic management in the 21st century means teaching and learning activities that are consistent with the basic education core curriculum and indicators of the health and PE department, with suitable teaching hours for the learners' learning (Pakaew, 2014: 23-24; according to Ministry of Education, 2002: 21-25). In addition, there is a method for organizing learning activities that encourage learners to practice (Rinsiri, 2015: 14-15) in order to encourage and develop the learners to be creative, be aware of the value and importance of exercise and sports, be sportsmanship and be able to apply good skills (Kuna-apisit, 2018: 220-221). Teachers' characteristics in the 21st century mean a teacher who has knowledge and understanding of the principles and philosophy of PE (The Rule of Teachers Council of Thailand on Profession Standards (No. 4) A.D. 2013, 2013: 72-74), and the teacher who has modern teaching methods and techniques used in organizing a variety of activities, as well as, use of technology to organize a variety of activities that meet the needs of learners (Pianchob, 2018: 191-198), creating a good atmosphere in class, along with a good attitude towards learners, listening to opinions and giving advice to learners, having responsibility, being fair to all learners equally, and appropriate attiring (Kuna-aphisit, 2018: 312-317). Places, media, and materials for pedagogic management in the 21st century mean appropriate, clean, safe and adequate places, media and materials for teaching and learning activities, along with standard and quality (Kuna-aphisit, 2018: 312-317). Materials are always checked and repaired to be ready for use. They should be modern according to the needs of the learners (Suwannasathitkorn, 2014: 16). Assessment and evaluation of pedagogic management in the 21st century means clear measurement and evaluation with criteria (Pianchob, 2018: 191-198). Many methods can be used to measure in both theory and practice to suit the learners (Koonkaew, 2015: 3). The learners are informed both before and after when the results are measured and evaluated, and the opportunity is provided to the learners to retake the test when they do not pass the criteria in order to evaluate their development. And the results can be used to improve teaching and learning (Bureau of Academic and Educational Standards, Office of the Education Commission and Standards, 2014: 95-96).

The concept of PE pedagogic management for the 21st century-teachers for primary-level students, under Buriram Primary Education Service Area Office 3.



RESEARCH METHODOLOGY

This research aims to study and compare PE pedagogic management of the 21st century-teachers for primary-level students affiliated with Buriram Primary Educational Service Area Office 3. The sample group conducted in this research was 312 PE teachers in elementary schools, determined by Taro Yamane's formula (Yamane, 1967). Multistage random sampling was conducted. The research instrument was a questionnaire on PE pedagogic management of teachers in the 21st century, with 4 aspects, which are pedagogic management, teachers' characteristics, places, media and pedagogic management materials, as well as, measurement and evaluation of pedagogic management in the 21st century. Data analysis was conducted by a packaged program, and statistics used were frequency, percentage, mean, standard deviation, t-test (Independent Samples and One-way Analysis of Variance).

RESEARCH RESULTS

Results on guidelines for PE pedagogic management of the 21st century-teachers for Primary-level students affiliated with Buriram Primary Educational Service Area Office 3 are as follows:

Table 1: Mean of PE pedagogic management for the 21st century-teachers in all aspects

Learning PE in the 21 st Century	Sample Group (n = 312)		Interpret
	\bar{X}	SD	
1. PE pedagogic management in the 21 st century	4.36	.56	High
2. The teachers' characteristics in the 21 st century	4.23	.60	High
3. Places, media and materials for pedagogic management in the 21 st century	3.73	.70	High
4. Assessment and evaluation of pedagogic management in the 21 st century	4.28	.54	High
Total	4.18	.52	High

Guidelines for PE pedagogic management for the 21st century-teachers can be summarized by aspect. Overall, it was at a high level (= 4.18). When considering in order, the aspect with the highest score was pedagogic management in PE in the 21st century (= 4.36), followed by assessment and evaluation of pedagogic

management in the 21st century (= 4.28), the teachers' characteristics in the 21st century (= 4.23), and places, media and pedagogic management materials in the 21st century (= 3.73), respectively.

Table 2: Results of mean of PE pedagogic management in the 21st century for PE teachers in all aspects between male and female

No	Particulars	PE pedagogic management				t	p
		Male		Female			
		\bar{X}	SD	\bar{X}	SD		
1.	PE pedagogic management in the 21 st century	4.37	.57	4.32	.53	.78	.43
2.	The teachers' characteristics in the 21 st century	4.25	.58	4.11	.63	2.30	.18
3.	Places, media and materials for pedagogic management in the 21 st century	3.87	.69	3.76	.71	1.25	.20
4.	Assessment and evaluation of pedagogic management in the 21 st century	4.31	.52	4.20	.57	1.72	.85

* P < .05

Male and female had PE pedagogic management in the 21st century with no statistical significance at the level of .05.

Table 3: Results of one-way analysis of variation for testing differences in PE pedagogic management for the 21st century-teachers among age ranges (n = 312)

No	Particulars	Source of Variation	Df	SS	MS	F	P
1.	PE pedagogic management in the 21 st century	Among groups	2	3.31	1.66	5.41	.00*
		Within the group	309	94.67	.31		
		Total	311	97.98			
2.	The teachers' characteristics in the 21 st century	Among groups	2	3.29	1.64	4.63	.01*
		Within the group	309	109.66	.36		
		Total	311	112.94			
3.	Places, media and materials for pedagogic management in the 21 st century	Among groups	2	1.91	.95	1.97	.14
		Within the group	309	149.47	.48		
		Total	311	151.38			
4.	Assessment and evaluation of pedagogic management in the 21 st century	Among groups	2	1.48	.74	2.57	.07
		Within the group	309	88.59	.29		
		Total	311	90.07			

* P < .05

There are two aspects of PE teachers among the ages. There was a significant difference in PE pedagogic management at the level of .05, namely PE pedagogic management in the 21st century and the teachers' characteristics in the 21st century. Therefore, the paired differences were tested using Fisher's Least Significant Difference (LSD).

Table 4: Results of paired comparison of guidelines for PE pedagogic management for teachers in the 21st century classified by age

Classified by Age	\bar{X}	Under 30 years	31-45 years	46-60 years
		4.35	4.27	4.53
Under 30 years	4.35	-	.093	-.171*

31-45 years	4.27	-	-.264*
46-60 years	4.53		-

* Statistical difference was at the level of .05.

PE teachers under 30 years old and those aged 46-60 years gained significant difference at the level of .05. PE teachers aged 31-45 years and those aged 46-60 years gained significant difference at the level of .05. In addition, PE teachers under 30 years old and those aged 31-45 years, there was no difference statistical significance at the level of .05.

Table 5: Results of a paired comparison of the 21st century PE teachers' learning management classified by age

Classified by Age	\bar{X}	Under 30 years	31-45 years	46-60 years
		4.35	4.27	4.53
Under 30 years	4.35	-	.006	-.238*
31-45 years	4.27		-	-.244*
46-60 years	4.53			-

* Statistical difference was at the level of .05.

PE teachers under 30 years old and those aged 46-60 years had significant difference at the level of .05. PE teachers aged 31-45 years and those aged 46-60 years had significant difference at the level of .05. In addition, PE teachers under 30 years old and those aged 31-45 years had no difference with statistical significance at the level of .05.

Table 6: The comparison results of PE pedagogic management of teachers in the 21st century in all aspects, between education background

No	Particulars	PE Pedagogic Management in the 21 st Century				t	p
		With PE Degree		Without PE Degree			
		\bar{X}	SD	\bar{X}	SD		
1.	PE pedagogic management in the 21 st century	4.57	.50	4.15	.54	.10	.00*
2.	The teachers' characteristics in the 21 st century	4.50	.46	3.97	.62	.10	.00*
3.	Places, media and materials for pedagogic management in the 21 st century	3.99	.64	3.67	.72	.04	.00*
4.	Assessment and evaluation of pedagogic management in the 21 st century	4.44	.47	4.11	.55	.01	.00*

* P < .05

According to the test of mean difference of PE pedagogic management teachers in the 21st century, overall, in all aspects between education background, PE pedagogic management in the 21st century in all particulars had difference with statistical significance at the level of .05.

Table 7: One-way ANOVA for testing the differences of guidelines for PE pedagogic management of the 21st century-teachers of PE teachers among the experience in teaching PE

No	Particulars	Source of Variation	Df	SS	MS	F	P
1.	PE pedagogic management in the 21 st century	Among groups	3	6.05	2.02	6.76	.00*
		Within the group	308	91.93	.30		
		Total	311	98.98			
2.	The teachers' characteristics in the 21 st century	Among groups	3	8.69	2.90	8.56	.00*
		Within the group	308	104.25	.34		
		Total	311	112.94			

3.	Places, media and materials for pedagogic management in the 21 st century	Among groups	3	9.16	3.06	6.67	.00*
		Within the group	309	142.22	.46		
		Total	311	151.38			
4.	Assessment and evaluation of pedagogic management in the 21 st century	Among groups	3	4.98	1.66	6.00	.00*
		Within the group	308	85.10	.28		
		Total	311	90.07			

* P < .05

PE with different experience had difference with statistical significance at the level of .05 in PE pedagogic management in all aspects. Therefore, the pairwise differences were tested using LSD (Fisher's Least Significant Difference).

Table 8: Results of paired comparison of guidelines for PE pedagogic management of teachers in the 21st century on PE pedagogic management in the 21st century classified by experience in teaching PE

Classified by Experience in Teaching PE	\bar{X}	1-10 years	11-20 years	21-30 years	Over 31 years
		4.28	4.52	4.50	4.76
1-10 years	4.28	-	-.239*	-.215	-.472*
11-20 years	4.52		-	.204	-.233
21-30 years	4.50			-	-.257
Over 31 years	4.76				-

* Statistical difference was at the level of .05.

PE teachers with 11-20 years and 11-20 years of experience in teaching PE had difference at statistical significance at the level of .05. In addition, PE teachers with 1-10 years and over 31 years of experience in teaching PE had difference at statistical significance at the level of .05.

Table 9: Results of paired comparison of guidelines for PE pedagogic management of the 21st century-teachers on the teachers' characteristics in the 21st century classified by teaching PE

Classified by Experience in Teaching PE	\bar{X}	1-10 years	11-20 years	21-30 years	Over 31 years
		4.28	4.52	4.50	4.76
1-10 years	4.28	-	-.232*	-.325*	-.568*
11-20 years	4.52		-	-.092	-.336*
21-30 years	4.50			-	-.244
Over 31 years	4.76				-

* Statistical difference was at the level of .05.

PE teachers with 11-20 years and 11-20 years of experience in teaching PE had difference at statistical significance at the level of .05. PE teachers with 1-10 years and 21-30 years of experience in teaching PE had difference at statistical significance at the level of .05. In addition, PE teachers with 1-10 years and over 31 years of experience in teaching PE had difference at statistical significance at the level of .05.

Table 10: Results of paired comparison of guidelines for PE pedagogic management of teachers in the 21st century on places, media, and pedagogic management materials in the 21st century classified by teaching PE

Classified by Experience in Teaching PE	\bar{X}	1-10 years	11-20 years	21-30 years	Over 31 years
		4.28	4.52	4.50	4.76
1-10 years	4.28	-	-.062	-.096	-.689*
11-20 years	4.52		-	-.034	-.627*
21-30 years	4.50			-	-.592*
Over 31 years	4.76				-

* Statistical difference was at the level of .05.

PE teachers with 1-10 years and over 31 years of experience in teaching PE had difference at statistical significance at the level of .05. PE teachers with 11-20 years and over 31 years of experience in teaching PE had difference at statistical significance at the level of .05. In addition, PE teachers with 21-30 years and over 31 years of experience in teaching PE had difference at statistical significance at the level of .05.

Table 11: Results of paired comparison of guidelines for PE pedagogic management of the 21st century-teachers on assessment and evaluation in pedagogic management materials in the 21st century classified by teaching PE

Classified by Experience in Teaching PE	\bar{X}	1-10 years	11-20 years	21-30 years	Over 31 years
		4.28	4.52	4.50	4.76
1-10 years	4.28	-	-.072	-.153	-.494*
11-20 years	4.52		-	-.081	-.422*
21-30 years	4.50			-	-.341*
Over 31 years	4.76				-

* Statistical difference was at the level of .05.

PE teachers with 1-10 years and over 31 years of experience in teaching PE gained difference at statistical significance at the level of .05. PE teachers with 11-20 years and over 31 years of experience in teaching PE gained difference at statistical significance at the level of .05. In addition, PE teachers with 21-30 years and over 31 years of experience in teaching PE gained difference at statistical significance at the level of .05.

Suggestions on the guidelines for PE pedagogic management of the 21st century-teachers are as follows: 1) PE teachers must have a vision and be up-to-date with new technologies. 2) New media and tools used in teaching and learning in the classroom and outside the classroom should be produced and are always up-to-date. 3) Technology and current situations has been should be introduced and applied to pedagogic management in order to attract learners and enhance knowledge and understanding. 4) Teachers must be active and always prepared for pedagogic management in the 21st century. And 5) Skill-based pedagogic management should be focused, and the students should be fostered with a positive attitude towards sports and a love for exercising.

CONCLUSION AND DISCUSSION

The guidelines for PE pedagogic management of the teachers in the 21st century, overall, were at a high level in all aspects. When considering in order with the highest score, namely: PE pedagogic management in the 21st century; followed by assessment and evaluation of pedagogic management in the 21st century; the teachers' characteristics in the 21st century; and places, media, and materials for pedagogic management in the 21st century, respectively. This may be due to PE pedagogic management of teachers in the 21st century, affiliated with Buriram Primary Educational Service Area Office 3 that encourages the learners for having unity and being sportsmanship; accepting for lose, win, and forgiveness. This is consistent with the pedagogic management approach in the 21st century that trains the students to enable to solve problems, to work in a group, to be fostered with morals, ethics, disciplines, and having sportsmanship (Saetow, 2013: 94). Students must be encouraged to develop physically, mentally, emotionally, socially and intellectually, in order to strengthen their sportsmanship, be dedicated, and generous so that they can live happily in the society (Suksai, 2021: 16). PE teachers should treat all students equally. Moreover, the teachers should be virtuous, ethical, or have good teacher characteristics and a good attitude towards students, including having sincere concern for all students equally (Saedi; Boonhan; & Thammathet, 2019: 20). Related to the characteristics of teachers in the 21st century, a teacher must be a good role model by adhering to morality, ethics, and justice, without prejudice to any person or work system, to encourage learners to achieve their potential in learning (Nuengchalerm, 2020: 19-20). According to pedagogic management in the 21st century, to organize pedagogic management well, a teacher must prepare a plan and arrange the classroom environment to be clean, comfortable, safe, and suitable for learners' learning (Saedi; Boonhan; & Thammathet, 2019: 20). Teaching and learning PE is a type of learning by doing with the use of materials, equipment, places, and facilities that are different from other

subjects. Therefore, the benefits and importance must be emphasized. If organized appropriately enough, it would help teachers work more efficiently in the 21st century (Kuna-aphisit, 2018: 292-293). Moreover, for assessment and evaluation, teachers must consider the consistency with the purpose according to actual conditions. The learners should also participate in the assessment. There is evaluation and re-evaluation so that the learners can improve and develop to be more effective (Thuanna, 2018: 941-942). Good assessment and evaluation of pedagogic management must be measured and evaluated to improve learners that can occur before, during, and after class. It is an evaluation to know the strengths and where to improve to be used as feedback to learners to correct their ideas and misunderstanding, enabling them to set goals for self-development (Buathong, 2017: 1862)

PE with different gender had their PE pedagogic management in the 21st century with no difference in statistical significance at the level of .05. This may be because in terms of PE pedagogic management, learners are taught to gain unity, have sportsmanship, and accept to lose, win and forgive, as well as creating enjoyment in the activities until the learners have fun and have more diverse activities. Therefore, different genders of teachers do not affect the pedagogic management of learning skills in the 21st century (Nguyen Thi Thu Ha, 2018: 21-23). Based on PE pedagogic management, teachers must be fair to all learners equally by creating the same standard of assessment for learners so that they feel fair. The difference in gender of teachers do not affect the competency of teachers to provide learning activities to promote learning skills of 21st century-learners (Chuchart, 2016: 162-163). Regarding the teachers' characteristics, places, media, and materials for pedagogic management in the 21st century, it is still necessary to improve the teaching and learning facilities to be clean, safe, and hygienic and to use teaching and learning media that are consistent with the curriculum of Health and PE department by focusing on the appropriateness of the activities and categories of sports used in PE teaching. To evaluate pedagogic management in the 21st century, the teachers should give learners the opportunity to retake the exam when learners fail. Also, the learners should be informed in advance every time before the evaluation so that they can use their results of the assessment and evaluation to improve their further learning. Different genders of teachers do not result in learners' strong perceptions of teacher's problem solving, critical thinking, collaboration, communication, and creativity in managing learning activities in the learning environment that is more open to students' questions and studies, and conducive to more positive attitudes (Sengul S. Anagun, 2018: 825-826).

PE teachers with different age had their pedagogic management in the 21st century with difference in statistical significance at the level of .05. This is probably because age range of each teacher has different pedagogic management, including establishing different standards for equality and dress code. Furthermore, different ages make pedagogic management and promoting pedagogic management materials by using media and communication devices to manage learning in the environment that is open to the students' questions and studies to contribute to more positive attitudes (Sengul S. Anagun, 2018: 825-826). Different age teachers affect the learning of students since the new generation of teachers still lacks the expertise in teaching both in academic aspect and as a teacher, as well as decreased attention to children. Meanwhile, older teachers do not adapt to keep up with the changes of the changing characteristics of the learners (Suksai, 2018: 12).

PE teachers with different education background gained their pedagogic management in the 21st century with difference in statistical significance at the level of .05. This may be because the teachers with qualifications in PE would arrange PE learning activities according to the knowledge, skills and experience that they have studied. They would find teaching methods, styles, and techniques that are suitable and have standards that are appropriate to a wide variety of learners by focusing on the suitability of sports, sport equipment availability, and places. There would be a variety of assessment and evaluation that can be used in both theory and practice sections. There are also clear criteria with standards, as well as giving students the opportunity to retake the exams when they fail. The role of PE teachers is very significant in health promotion and health of the students, which they must adjust their roles according to the changing learning approach. However, roles, features and functions of PE teachers must be developed to keep up with the changes in various contexts by changing from an instructor to be a facilitator in order to guide and learn new things along with the learners (Suksai, 2018: 11-20). Teachers' educational qualifications would be well adapted to teaching and learning activities (Wattanakul, 2015: 85-91).

PE teachers with different work experience gained their pedagogic management in the 21st century with difference in statistical significance at the level of .05. According to PE pedagogic management in the 21st

century, the experienced teachers are able to teach the students to have unity, be sportsmanship, accept to lose, win, and forgive that helps them to gain sport skills and enable to apply these skills for the highest benefits. Moreover, the experienced teachers treat all students equally and have different teaching techniques. and they can provide PE learning activities that meet the needs of the students. They can also plan on clean, safe and hygienic places, media, and pedagogic management materials, and be able to provide assessment and evaluation according to actual conditions. Various assessment and evaluation methods are used. Teacher's teaching experience would make students work on creativity and problem solving, and give them the opportunity to practice (Nguyen Thi Thu Ha, 2018: 21-23). Teachers with different teaching experience would have pedagogic management using different teaching strategies such as the use of technology media and self-improvement involving tech-savvy colleagues (Uche, Chineze, M. and Kaegon, Leesi. E. S P, 2016: 83-84).

Suggestions for teachers' pedagogic management in PE in the 21st century for primary-level students, teachers should develop a model for organizing activities by providing activities for learners to unite and have sportsmanship, accepting to be lose, win, and forgive. Furthermore, there should be activities that create a variety of fun and enjoyment for learners. Assessment standards should be established for learners to encourage them a sense of justice.

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