

Physical education in elementary school context from teachers' perspective

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ABSTRACT: *Physical education (PE) is currently one of the top concerns of education in modern society, given its critical role in promoting sustainable development of human capital in society. Different from the high priority of physical education in the educational system of developed countries, this subject has not been given sufficient focus in many developing countries, including Vietnam. This article aims to provide a dataset of self-awareness and perception about PE practices of 1069 PE teachers at elementary schools from 26 provinces throughout Vietnam. Some recommended analysis techniques to utilize this dataset are also proposed. The dataset is expected to provide the necessary materials for further research about PE practices in developing contexts, which facilitates educators and policymakers to acquire a better understanding of PE promotion in an educational setting.*

KEYWORDS: Physical education; physical activity; elementary school; Vietnam; teacher's awareness; teacher perception; data.

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1. Introduction

The dataset contains 1069 observations from Physical Education (PE) teachers at elementary schools in 26 provinces in Vietnam. The investigation is based on a 46-item questionnaire split into two question groups. The first group explores background information of PE teachers, while the second group examines PE teachers' awareness and perceptions of various aspects of PE practices. Specifically, there are five domains included in this group including the role of PE, school's infrastructure and facilities, implementation of PE programs, institutional effects and effectiveness of PE teaching and learning.

Some research has demonstrated the positive impacts of PE on students' cognitive and academic achievement. Obtaining a good PE also helps children prevent obesity, promote their lifelong physical fitness. Moreover, studies also found that PE is beneficial to the development of some essential skills, such as problem-solving, decision making and planning skills (Van der Niet, 2015). Many studies have highlighted the vital role of PE teachers on the quality of teaching this subject at school, particularly the positive

correlation between PE teacher's perception and attitudes and students' motivation of learning [2]. In addition, teachers' teaching competencies and institutional effects have also found to be associated with the quality of PE in school context. Therefore, understanding the views of teachers about PE position, school conditions, curriculum, as well as students' learning and attitudes, is crucial. Comprehensive research into PE at elementary school stage, such as this study, is even more critical because physical health has been proved to stimulate students' intellectual and physical development at later educational level (Ericson & Karlsson, 2014).

In many developed countries, the above mentioned essential role of PE has long been recognized. However, in Confucianism and developing nations with the deep-rooted tradition that highly values intellectuals and knowledge-based education, academic subjects such as Math, Language, and Sciences are given much more attention while PE is largely neglected (Jin, 2016). In Vietnam as an example, despite the impressive ranking in PISA with its students' academic performance surpassing those

of many OECD countries, physical health of Vietnamese citizens still remains an issue that needs addressing (Vuong, 2018). Enhancing the quality of PE teaching and learning in the school context has recently received more attention and concern from the Vietnamese government (Minister, 2011). This is because lifting the quality of human resources through building a strong physical foundation as the basis for the development of skills and capabilities is the country's major educational mission. As a result, this study, which takes a holistic approach to the current status of PE teaching and learning in Vietnam from teachers' perspective, would provide valuable insights for educators and policymakers in similar contexts of education.

In the next section, the detailed structure of the survey questionnaire and description of each variable in the dataset are provided, together with potential research questions drawn from the research framework and proposed an analysis of data. The values of the dataset and its scientific, as well as practical implications, are discussed as concluding remarks.

2. Data Description

The dataset includes feedbacks of 1069 elementary physical education teachers from 26 provinces of Vietnam. The survey questionnaire, focuses on the status of teaching and learning PE at the elementary level, consists of 47 questions divided into two groups. Group (1) comprises eight items on the teacher's background information. Group (2) incorporates five domains with 39 items concerning teachers' opinions about PE teaching in elementary schools.

2.1. Group (1): Background information

Table 1: Distribution of teachers according to their background information

Description	Value	Frequency	Proportion
Gender	Male	718	67.17%
	Female	351	32.83%
Age (years old)	Under 30	200	18.71%
	From 30 to 39	676	63.24%
	From 40 to 49	160	14.97%
	From 50 and over	33	3.09%

Description	Value	Frequency	Proportion
Ethnic group	Kinh	872	81.57%
	Others	197	18.43%
Level of education	Diploma	42	3.93%
	Associate	281	26.29%
	Bachelor	731	68.38%
	Master/Doctor	15	1.40%
Training major	PE	965	90.27%
	Others	104	9.73%
Teaching Experience (years)	Less than 5	179	16.74%
	From 5 to 10	523	48.92%
	From 10 to 15	208	19.46%
	More than 15	159	14.87%
School location	Urban area	295	27.60%
	Rural area	497	46.49%
	Remote area	277	25.91%
Average class size (students)	Less than 35	780	72.97%
	From 35 to 45	232	21.70%
	From 46 to 55	44	4.12%
	More than 55	13	1.22%

Questions in this part cover teachers' demographic information and teaching context. As presented in table 1, two-thirds of the 1069 participants are male teachers, and over 60% are in their thirties. The majority of teachers have degree level qualifications in physical education, and approximately 50% have five to ten years of teaching experience (Figure 1). Nearly 47% of the surveyors are from rural areas, and over 70% reported their average class size of below 35.

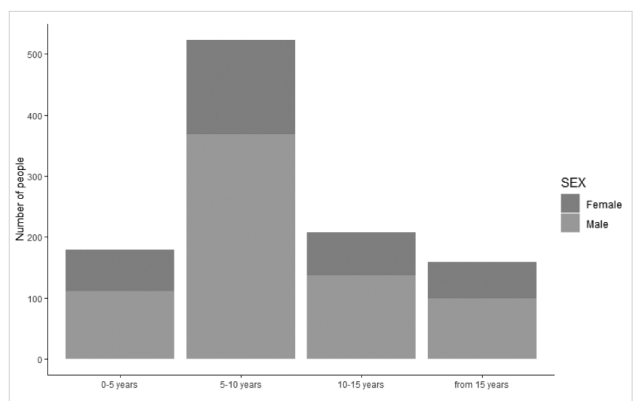


Figure 1: Distributions of teachers' teaching experience by sex

2.2. Group (2): Physical Education teaching in elementary schools

Group (2) questions were designed to explore the reality of PE in elementary schools from the teachers' point of view. Specifically, the 38 items, split into five domains, in this part of the questionnaire investigate teachers' awareness of the role of PE, schools' infrastructure and facilities, the implementation of PE program, institutional effects as well as students' attitudes and learning outcomes (see dataset).

2.2.1. Domain (A): The role of Physical Education

Responses to the 94-point Likert scale questions in the domain (A) reflect PE teachers' perception of their own and other stakeholders' awareness of the importance of PE in elementary education. The results indicate that even though almost all surveyed teachers confirmed the essential role of PE to elementary students and over 95% of them believed the school board also value the benefits of PE as either important or very important, only 46% of the teachers were confident that parents have a genuine concern for this subject.

Table 2: Distributions teachers' perception of the role and position of PE in elementary schools

Value	Frequency	Proportion
A1. The importance level of physical education		
Not important	1	0.09%
Somewhat important	26	2.43%
Important	335	31.34%
Very important	707	66.14%
A2. The level of interest of managers in PE		
Not at all interested	2	0.19%
Somewhat interested	50	4.68%
Interested	501	46.87%
Very interested	516	48.27%
A3. Parent's level of interest in PE		
Not at all interested	31	2.90%
Somewhat interested	539	50.42%
Interested	368	34.42%
Very interested	131	12.25%
A4. Benefits of Physical Education subject		
A4.1. Equipping basic knowledge about health care and protection		

Value	Frequency	Proportion
Not useful	1	0.09%
Moderately useful	2	0.19%
Useful	180	16.84%
Very useful	886	82.88%
A4.2. Developing physical foundation and readiness for higher educational level		
Not useful	2	0.19%
Moderately useful	1	0.09%
Useful	166	15.53%
Very useful	900	84.19%
A4.3. Creating opportunities to learn, share and communicate		
Not useful	1	0.09%
Moderately useful	15	1.40%
Useful	252	23.57%
Very useful	801	74.93%
A4.4. Enhancing the ability to cooperate, coordinate and promote team spirit		
Not useful	1	0.09%
Moderately useful	1	0.09%
Useful	167	15.62%
Very useful	900	84.19%
A4.5. Applying learned skills into learning, extracurricular and daily activities		
Not useful	1	0.09%
Moderately useful	5	0.47%
Useful	307	28.72%
Very useful	756	70.72%
A4.6. Setting up a regular exercise habit		
Not useful	2	0.19%
Moderately useful	7	0.65%
Useful	158	14.78%
Very useful	902	84.38%

Questions A4.1 to A4.6, as listed in table 2, ask teachers to rate the benefits of PE on various aspects. Overall, the majority (about 70-80%) of the teachers agreed that PE is very useful, not only in terms of preparing young students with basic knowledge about healthcare as well as a foundation for later physical development but also concerning opportunities for advancing life skills and social interactions.

2.2.2. Domain (B): School's infrastructure and facilities

In this domain, teachers were asked to give opinions about the teaching conditions in their schools and how well these factors address the requirements of elementary level teaching of PE. Most respondents confirmed that their school conditions are adequate to secure the effectiveness of teaching (see table 3)

Table 3: Distribution of teachers' responses on the degree to which their school's infrastructure and facilities satisfy teaching requirements.

Code	Description	Value	Freq	Proportion
B1	Training places	not satisfying	39	3.65%
		fairly satisfying	222	20.77%
		strongly satisfying	619	57.90%
		totally satisfying	189	17.68%
B2	Training equipment and tools	not satisfying	66	6.17%
		fairly satisfying	314	29.37%
		strongly satisfying	564	52.76%
		totally satisfying	125	11.69%
B3	Teaching aids	not satisfying	46	4.30%
		fairly satisfying	271	25.35%
		strongly satisfying	605	56.59%
		totally satisfying	147	13.75%
B4	Training conditions	not satisfying	33	3.09%
		fairly satisfying	184	17.21%
		strongly satisfying	614	57.44%
		totally satisfying	238	22.26%

2.2.3. Domain (C): Implementation of PE programs

Domain (C) consists of 16 Likert scale questions presented in tables 4 and 5 aiming to examine the implementation of PE programs, including curriculum (questions C1 - C3), pedagogy (C4 - C5), and assessment and testing methods (C6). In general, about 80 - 90% of the teachers held positive views about the current PE program, given the design of curriculum content (see figure 2), the usefulness of teacher guidelines as well as assessment and testing methods.

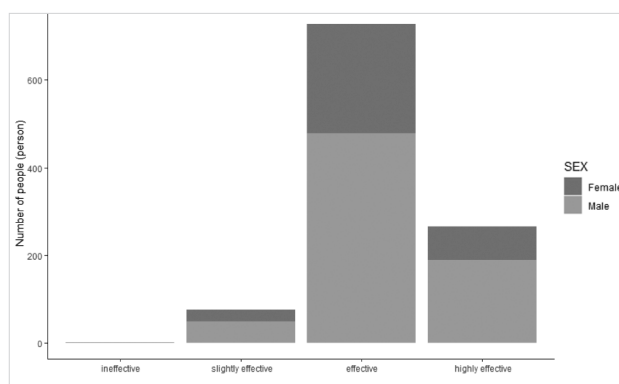


Figure 2. Distributions of teachers' perception of the curriculum by sex

Table 4: Distributions of items relating to current curriculum, content and teacher guidelines of the current PE programs

Code	Description	Value	Freq	Proportion
C1	The extent to which the current PE programs satisfy teaching requirements for PE			
C1.1	Curriculum Content	not satisfying	0	0.00%
		fairly satisfying	38	3.55%
		strongly satisfying	576	53.88%
		totally satisfying	455	42.56%
C1.2	Teacher guidelines	not satisfying	8	0.75%
		fairly satisfying	95	8.89%
		strongly satisfying	641	59.96%
		totally satisfying	325	30.40%
C1.3	Assessment and testing methods	not satisfying	6	0.56%
		fairly satisfying	54	5.05%
		strongly satisfying	624	58.37%
		totally satisfying	385	36.01%
C2	Effectiveness of the current PE curriculum	ineffective	1	0.09%
		moderately effective	75	7.02%
		effective	728	68.10%
		very effective	265	24.79%
C3	The extent to which teaching guidelines satisfy the teaching requirements of PE			
C3.1	Scientifically and pedagogically	not satisfying	6	0.56%
		fairly satisfying	39	3.65%
		strongly satisfying	580	54.26%
		totally satisfying	444	41.53%

Code	Description	Value	Freq	Proportion
C3.2	Scientifically and practically updated	not satisfying	23	2.15%
		fairly satisfying	191	17.87%
		strongly satisfying	627	58.65%
		totally satisfying	228	21.33%
C3.3	Suitability with physiological and physical characteristics of elementary students.	not satisfying	10	0.94%
		fairly satisfying	73	6.83%
		strongly satisfying	577	53.98%
		totally satisfying	409	38.26%

Regarding pedagogy, statistics show that the majority of teachers use various methods of teaching and highly value the effectiveness of these methods. Most surprisingly, despite the fact that PE is a subject that typically involves movements and practice, nearly 50% reported frequent use of lecturing in their lessons and over 90% rated this method as effective or very effective.

Table 5: Distributions of items relating to teaching, assessment and testing methods

Description	Value	Frequency	Proportion
C4. Frequency of using teaching methods			
C4.1. Lecturing	Hardly ever	0	0.00%
	Occasionally	90	8.42%
	Sometimes	446	41.72%
	Frequently	533	49.86%
C4.2. Modelling	Hardly ever	0	0.00%
	Occasionally	44	4.12%
	Sometimes	376	35.17%
	Frequently	649	60.71%
C4.3. Game - based methods	Hardly ever	0	0.00%
	Occasionally	35	3.27%
	Sometimes	380	35.55%
	Frequently	654	61.18%
C4.4. Performance and competition	Hardly ever	3	0.28%
	Occasionally	153	14.31%
	Sometimes	450	42.10%
	Frequently	463	43.31%
C5. Effectiveness of teaching methods and forms			
C5.1. Lecturing	ineffective	3	0.28%
	moderately effective	72	6.74%

Description	Value	Frequency	Proportion
C5.2. Modelling	effective	525	49.11%
	very effective	469	43.87%
	ineffective	0	0.00%
	moderately effective	17	1.59%
C5.3. Game - based method	effective	319	29.84%
	very effective	733	68.57%
	ineffective	0	0.00%
	moderately effective	14	1.31%
C5.4. Performance and competition	effective	307	28.72%
	very effective	748	69.97%
	ineffective	0	0.00%
	moderately effective	52	4.86%
C5.5. Effectiveness of assessment and testing methods in PE according to current regulations	effective	384	35.92%
	very effective	633	59.21%
	ineffective	6	0.56%
	moderately effective	69	6.45%
	effective	686	64.17%
	very effective	308	28.81%

In relation to the effectiveness of the revised assessment and testing methods in PE which highlight the role of constructive feedbacks over a grading system, more than 90% of the respondents agreed that the newly adopted assessment and testing forms are effective or very effective.

2.2.4. Domain (D): Institutional effects

Questions D1 - D6 (Table 6) in the domain (D) collect information about school management of and policies for PE. In particular, the questions concern the effectiveness of school board's development and supervision of PE teaching plan, the level of encouragement and support to PE teachers, professional development, teachers' flexibility in teaching, as well as the administration works. Overall, the surveyed teacher exhibited a high level of satisfaction with the orientation, supervision, and support from their school board of admins. In addition, 90% of the teachers reported having fair to complete autonomy over the implementation of PE programs in their schools.

Table 6: Distribution of teachers' evaluation of school management and policies for PE

Description	Value	Frequency	Proportion
D1. Effectiveness of school board's development teaching plan for PE	ineffective	1	0.09%
	somewhat effective	15	1.40%
	effective	543	50.80%
	very effective	510	47.71%
D2. Effectiveness of school board's supervision	ineffective	0	0%
	somewhat effective	16	1.50%
	effective	464	43.41%
	very effective	589	55.10%
D3. Effectiveness of professional development programs and activities for PE teachers	ineffective	6	0.56%
	somewhat effective	50	4.68%
	effective	598	55.94%
	very effective	415	38.82%
D4. The extent to which teacher is flexible in teaching PE (content, curriculum, lesson plans)	inflexible	5	0.47%
	somewhat flexible	90	8.42%
	fairly flexible	543	50.80%
	very flexible	431	40.32%
D5. How reasonable administrative works are	unreasonable	4	0.37%
	somewhat reasonable	59	5.52%
	fairly reasonable	522	48.83%
	very reasonable	484	45.28%
D6. How effective the encouragement and support from school board are	not effective	8	0.75%
	somewhat effective	75	7.02%
	fairly effective	469	43.87%
	very effective	517	48.36%

2.2.5. Domain (E): Effectiveness of PE teaching and learning

Domain (E) aims to investigate the effectiveness of PE at elementary schools. As shown in table 6, even though over 90% of the surveyed teachers were confident that students have positive attitudes towards PE (Figure 3) and teaching practice of this subject efficiently address learning objectives, the outcomes in students' behaviors and lifestyle are not impressive. In

particular, only a third of the respondents think their students often engage in sports and physical activities at school.

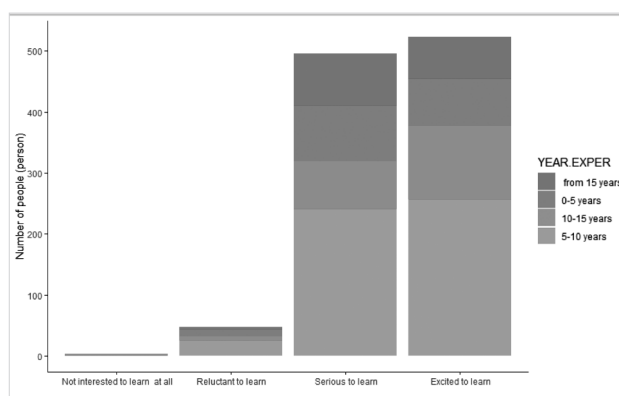


Figure 3: Distributions of teachers' perception of students' learning attitude by teaching experience

2.3. Potential research questions

Various factors have been found to affect the quality of PE in school settings. Teachers' role, learning objectives, equity, curriculum, assessment methods, school facilities, and management are among the most widely researched elements of school PE (Capel & Piotrowski, 2013; Lund & Tannehill, 2014; Hill et al., 2015; Evan, 2017). In relation to PE learning of elementary students, teachers' qualification, attitudes, and competencies have been confirmed to be essential (Mawer, 2014; De Meyer et al., 2014; Aeterman et al., 2014; Ward et al., 2015). In terms of pedagogy, research has proposed various teaching techniques and models that positively improve students' motivation and attitudes towards PE such as collaborative pedagogy (Dyson & Casey, 2012), the instructional models (Metzler, 2017), and integration of critical thinking and problem-solving skills (Treasure & Robert, 2001). Based on our dataset, some potential research questions could be raised as follows:

1. What are the teachers' background factors (region, sex, teaching experience, academic background) that would affect their students' attitudes towards PE?
2. How do the teachers' teaching experience and academic background associate with their use of teaching methods in PE lessons?
3. How does PE teachers' use of teaching

Table 7: Distributions of students' attitudes and learning outcomes from teachers' perspectives

Code	Description	Value	Frequency	Proportion
E	Evaluating students' attitudes and learning outcomes			
E1	Students' learning attitude towards PE	Afraid of learning	3	0.28%
		Reluctant to learn	47	4.40%
		Serious about learning	496	46.40%
		Excited to learn	523	48.92%
E2	How frequently students participate in extracurricular sports activities at school	Hardly ever	27	2.53%
		Occasionally	312	29.19%
		Sometimes	418	39.10%
		Frequently	312	29.19%
E3	The quality of PE teaching as opposed to learning objectives	Very low quality	1	0.09%
		Low quality	26	2.43%
		Good quality	754	70.53%
		Very high quality	288	26.94%

methods affect their students' level of engagement in physical activities?

4. Are there any differences among PE teachers' perceptions of students' attitudes and support from the school boards in different regions?

3. Methods

3.1. Study design and data collection

The questionnaire design was based on previous studies about factors impacting school physical education. There has been evidence that, besides a comprehensive PE programs, teachers' perception, knowledge, and attitudes are correlated with students' learning outcomes in PE (De Meyer et al., 2014). Particularly, active teaching methods that focus on students and effective assessment forms could significantly stimulate students in PE lessons. This is important because youth's interest and engagement in physical activity, from which to improve their quality of life, are the ultimate goal of physical education (Bevans et al., 2010). In addition, the goal of optimizing learning opportunities and raising the quality of PE teaching also necessitates investment in facilities and school physical conditions (Larson & Miller, 2011) as well as effective management (Jin, 2016). With the aim to capture a panoramic view of the current state of PE teaching and learning in the

Vietnamese educational context, this research encompasses five domains in the questionnaire concerning stakeholders' awareness of PE; school infrastructure and facilities; implementation of PE programs (curriculum, pedagogy and assessment); institutional effects; and effectiveness of PE learning and teaching.

The sample of this research covers 1069 PE teachers in elementary schools from 26 cities and provinces in Vietnam. List of surveyed provinces is provided in our dataset. The locations for data collection were determined to include urban, rural, and remote areas to allow control for regional variables and cross-comparison.

The research procedure involved four main steps: 1. Develop the research framework and design of the survey questionnaire. 2. Carry out data collection with the support from local educational departments; 3. Input, clean, design, and encode data; 4. Data analysis.

3.2. Data analysis

After completing the data collection, the responses' information from the survey questionnaire were imported into an excel file typed as data.xlsx (see the dataset). At the next step, the file was saved in CSV format and then run by R statistical software for analyses.

3.2.1. Frequentist analysis

Because the data contains numerical variables, linear regression model is appropriate to apply. The linear equation is expressed below is the typical equation for the model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Y is a continuous variable; the independent variables X_i can be concrete, categorical, or continuous. For example, in the data, the outcome variable being 'perception on the effectiveness of Management' in school ' (D1' to 'D8'), the 'SEX' and 'YEAR.EXPER', as predictor variables. Using R software, the liner regression model's coefficients are shown in Table 8.

Table 8: Estimating of independent variables 'SEX,' teaching experience 'YEAR.EXPER', against outcome variable 'cor_mag.eff' - the effectiveness of management in school (the variables from 'D1' to 'D6').

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3.36232	0.03393	99.087	2e-16 ***
factor(SEX)2	-0.05425	0.02814	-1.928	0.0542
factor(YEAR.EXPER)2	0.09502	0.03739	2.541	0.0112 *
factor(YEAR.EXPER)3	0.02773	0.04394	0.631	0.5282
factor(YEAR.EXPER)4	0.05299	0.04696	1.128	0.2594

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
 Residual standard error: 0.4309 on 1064 degrees of freedom
 Multiple R-squared: 0.01172, Adjusted R-squared: 0.008004
 F-statistic: 3.154 on 4 and 1064 DF, p-value: 0.01367

The code examples on R that were used to come up with the results in Table 8 are shown below:

```
>data = read.csv (file.choose (), header = T,
na.string = T)
> names(data)
> attach(data)
> data$mean_mag.eff <-
rowMeans(data[,40:45], na.rm=TRUE)
>cor_mag.eff = lm(mean_mag.eff ~
factor(SEX)+ factor(YEAR.EXPER),
data=data)
>summary(cor_mag.eff)
```

In the dataset there were more codes of R examples. Linear regression model:

$$Y = 3.36232 - 0.05425x \text{ SEX}(2) + 0.09502 x \text{ YEAR.EXPER}(2) + 0.02773 x \text{ YEAR.EXPER}(3) + 0.05299 x \text{ YEAR.EXPER}(4)$$

Table 9: Estimating of the independent variable "QUALI" - qualifications of teachers against outcome variable 'teaching method's effectiveness' (the variables from 'C5.1' to 'C5.4').

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3.529762	0.063343	55.724	2e-16***
factor (QUALI)2	-0.001292	0.067912	-0.019	0.985
factor (QUALI)3	0.055053	0.065137	0.845	0.398
factor (QUALI)4	-0.046429	0.123478	-0.376	0.707

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
 Residual standard error: 0.4105 on 1065 degrees of freedom
 Multiple R-squared: 0.004504, Adjusted R-squared: 0.0017
 F-statistic: 1.606 on 3 and 1065 DF, p-value: 0.1862

Coding examples on R that give the results in Table 9 are shown below:

```
>data = read.csv (file.choose (), header = T,
na.string = T)
>names(data)
>attach(data)
> data$mean_tea.method
<- rowMeans(data[,35:38],
na.rm=TRUE)
> tea.met = lm(mean_tea.met ~ factor(QUALI),
data=data)
> summary(tea.met)
```

4. Conclusions

Physical education and physical activities play an important role in the educational setting because of their great benefits to students' health, well being as well as cognitive competencies. In that context, the dataset compiles detail information regarding PE teachers' perceptions about the teaching and learning of this subject at the

elementary level. Highlighting the important role of PE teachers, while a large number of previous studies took an objective approach, our research comes from a subjective perspective of teachers themselves as insiders in the school context of PE. The design of the survey questionnaire encompasses all factors presumably affecting the elementary level of physical education. Findings from this dataset would hopefully contribute to the creation of momentum for further PE multidimensional research which is expected to blossom in the era of comprehensive education with much focus on physical development in the 21st century (Larson & Miller, 2011). The dataset is not only useful in contributing to clarify the

PE research field, supplying a valuable dataset from PE teachers' viewpoints but also helpful for policymakers, especially in the context of educational reforms.

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References

- Van der Niet, A.G., et al., *Associations between daily physical activity and executive functioning in primary school-aged children*. Journal of Science and Medicine in Sport, 2015. 18(6): p. 673-677.
- Bennie, A., et al., *Physical education teachers' perceptions about the effectiveness and acceptability of strategies used to increase relevance and choice for students in physical education classes*. Asia-Pacific Journal of Teacher Education, 2017. 45: p. 302-319.
- Ericsson, I. and M.K. Karlsson, *Motor skills and school performance in children with daily physical education in school-a 9-year intervention study*. Scandinavian journal of medicine & science in sports, 2014. 24(2): p. 273-278.
- Jin, C., *Analysis on factors of affecting the status of physical education in Chinese school*. SHS Web of Conferences, 2016. 24: p. 02017.
- Vuong, Q.-H., et al., *Factors Associated with the Regularity of Physical Exercises as a Means of Improving the Public Health System in Vietnam*. Sustainability, 2018. 10(11): p. 3828.
- Minister, P., *Decision No 641/QĐ-TTG of the Prime Minister approving the general project on Developing Vietnamese people's physical strength and stature for 2011 - 2030*. 2011.
- Capel, S. and S. Piotrowski, *Issues in physical education*. 2013: Routledge.
- Lund, J. and D. Tannehill, *Standards-based physical education curriculum development*. 2014: Jones & Bartlett Publishers.
- Hills, A.P., D.R. Dengel, and D.R. Lubans, *Supporting public health priorities: recommendations for physical education and physical activity promotion in schools*. Progress in cardiovascular diseases, 2015. 57(4): p. 368-374.
- Evans, J., *Equality, education, and physical education*. 2017: Routledge.
- Mawer, M., *Effective teaching of physical education*. 2014: Routledge.
- De Meyer, J., et al., *Does observed controlling teaching behavior relate to students' motivation in physical education?* Journal of Educational Psychology, 2014. 106(2): p. 541.
- Aelterman, N., et al., *Fostering a need-supportive teaching style: Intervention effects on physical education teachers' beliefs and teaching behaviors*. Journal of Sport and Exercise Psychology, 2014. 36(6): p. 595-609.
- Ward, P., et al., *Effects of improving teachers' content knowledge on teaching and student learning in physical education*. Research quarterly for exercise and sport, 2015. 86(2): p. 130-139.
- Dyson, B. and A. Casey, *Cooperative learning in physical education: A research based approach*. 2012: Routledge.
- Metzler, M., *Instructional models in physical education*. 2017: Routledge.
- Burrows, L., D. Macdonald, and J. Wright, *Critical Inquiry and Problem Solving in Physical Education: Working with Students in Schools*. 2013: Routledge.
- Treasure, D.C. and G.C. Robert, *Students' Perceptions of the Motivational Climate, Achievement Beliefs, and Satisfaction in Physical Education*. Research Quarterly for Exercise and Sport, 2001. 72(2): p. 165-175.
- Bevans, K.B., et al., *Physical education resources, class management, and student physical activity levels: A structure-process-outcome approach to evaluating physical education effectiveness*. Journal of School Health, 2010. 80(12): p. 573-580.
- Larson, L.C. and T.N. Miller, *21st Century Skills: Prepare Students for the Future*. Kappa Delta Pi Record, 2011. 47(3): p. 121-123.