ASSESSMENT THE STATUS OF PHYSICAL EDUCATION AT HCMC UNIVERSITY OF TECHNOLOGY AND EDUCATION, VIETNAM

Nguyen Duc Thanh[i]
PhD, Physical and Defense Education Center,
Ho Chi Minh University of Technology and Education,
Vietnam

Abstract:
Overall research on the current situation such as: Physical education subject program; Documents and textbooks for teaching and learning; Teaching staff; Methods for teaching; Testing and evaluation; Facilities, grounds, learning conditions; Extracurricular Activities; The concern of the university leadership towards physical education; Collaboration between physical education faculty members and departments; Satisfaction level of both lecturers and students, etc. to discover the limitations and propose effective improvement solutions.

Keywords: programs, facilities, lecturers, physical education, satisfaction, testing, extracurricular, coordination, materials

1. Introduction

Currently, the explosive development of the 4.0 science and technology revolution requires universities to constantly innovate and adapt educational thinking to survive. In Vietnam, the quality of educational training, especially at the university level, has long been a pressing issue that is deeply concerned by society not only by educational experts but also by students learning in universities.

Physical education (PE) is a subject of an educational program aimed at providing basic motor knowledge and skills for learners through exercises and active games to contribute to the achievement of a comprehensive educational goal for students.

Ho Chi Minh City University of Education and Technology is a multi-disciplinary university in the direction of career - application, in which some fields of study are oriented to research and development. The university has a reputation and a long tradition of more than 55 years, an advanced management and training program, and gradually affirms its position in domestic and international education. It is also located

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[i] Correspondence: email thanhnd@hcmute.edu.vn

in a favorable geographical location, with enough land to meet the renovation of construction of yards and gymnasiums for physical education and sport activities.

It is these activities that have contributed practically to the training of a comprehensive workforce of virtue, intellect, health and beauty. At the same time, they also have abundant physical strength, solid skills, knowledge and effective application of science and technology to be ready to meet the labor requirements of society. However, the specific effect of physical education at Ho Chi Minh City University of Technical Education by learners and professionals' evaluation has not been studied so far. For these reasons, it is essential to conduct a research on the actual situation of physical education work at HCMC University of Education and Technology. The research results will be the basis for considering to better adjust and improve this activity for the benefit of learners and contribute to improving the quality of education here.

2. Methods

2.1. Research objects
The research objects consist of 20 staffs, lecturers of the Physical and Defense Education Center and 320 male and female students with normal physical health participating in physical education in HCMC University of Technology and Education.

2.2. Process
The study was carried out from February, 2019 to March, 2020 at the HCMC University of Technology and Education.

2.3. Measuring tools
Common methods used in the process of researching include synthesizing and analyzing relevant document methods; sociological investigation method; statistical and calculation method. Evaluation tools include:

a. Likert scale - 5 levels
Interviewing two objects (students and lecturers) with 2 questionnaires based on Likert scale - 5 levels: Completely agree (5 points); Agree (4 points); Neutral (3 points); Disagree (2 points); Strongly disagree (1 point). In particular, the average value = (maximum - minimum) / n = (5 - 1) / 5 = 0.8.

Evaluate average values by range:

Average	Meaning
1,00 – 1,80	Strongly disagree
1,81 – 2,60	Disagree
2,61 – 3,4	Neutral
3,41 – 4,2	Agree
4,21 – 5,00	Completely agree

b. Reliability measurement using Cronbach's Alpha coefficient

Cronbach's Alpha coefficients (Cronbach, 1951) is intended to help eliminate unreliable observed variables (with the coefficient of variation and total variables less than 0.3). In other words, if a measurement variable has a correlation coefficient of total variable (Corrected Item - Total Correlation) ≥ 0.3 then that variable is satisfactory (Source: Nunnally, J. (1978), Psychometric Theory, New York, McGraw-Hill). Cronbach's Alpha coefficient has a variable value in range [0,1].

Value of Cronbach's Alpha coefficient:

- from 0.8 to nearly 1: very good measurement scale.
- from 0.7 to nearly 0.8: good measurement scale.
- from 0.6 or more: qualified measurement scale.

For this research, we accepted Cronbach's Alpha coefficient ≥ 0.6.

Note that the value of "If Item Deleted" column in Cronbach's Alpha, this column represents Cronbach's Alpha coefficient if the variable type is under consideration. Normally, it will be evaluated with the correlation coefficient of the total Corrected Item - Total Correlation, if the value of "If Item Deleted" is greater than the Cronbach's Alpha coefficient and Corrected Item - Total Correlation < 0.3 then the type of observed variable is considered to increase the reliability of the scale.

Table 1: Summary of factors and variables after testing through Cronbach's Alpha coefficients

Index	Factors	Encode	Initial observation variable		Remain observation variable		Cronbach's Alpha		Eliminated variables	
			L	S	L	S	L	S	L	S
1	Curriculum of formal physical education	CUR	5	5	5	5	.803	.960		
2	Documents and textbooks for teaching and learning	DOC	5	5	5	5	.844	.965		
3	Lecturer team	LEC	5	5	5	5	.745	.838		
4	Method of teaching	MET	5	5	5	5	.878	.889		
5	Examination and evaluation	EXA	5	5	4	4	.668	.759	1 variable (EXA_5 Ensuring the development, proper learning motivation of learners)	
6	Facilities, yards, learning conditions	FAC	5	5	5	5	.942	.960		
7	Extracurricular activities	EXT	6	6	5	5	.897	.844	1 variable (EXT_6 Prevention of social evils	
8	Concern of the university leadership towards physical education	CON	5	5	5	5	.847	.788		
9	Collaboration between physical education faculty members and departments	COL	5	5	5	5	.885	.914		
10	Satisfaction rate	SAT	9	9	9	9	.914	.897		

Note: L: Lecturer; S: Student.

After examining the reliability of observed variables according to the criteria for evaluating physical education by Cronbach's Alpha coefficient, the results are shown in Table 1.

Through Table 1, after eliminating variables, Cronbach's Alpha coefficient of all scales ≥ 0.6 (from 0.668 to 0.965), the correlation coefficients of the observed variables in the scale are > 0.4, and there are two cases of eliminating observed variables. All accepted observed variables will be used in the next factor analysis.

c. Chi square Indicator - χ^2

The indicator is used to evaluate qualitative characteristics (identifiers, hierarchies, properties, categories ...) on frequencies that do not require standard probability distribution. In the research, we used this test to compare ideas of observing variables between students and faculty.

d. Accrediting hypothesis of the average value of two independent samples (independent samples t-test)

After surveying the observed variables tested by Cronbach's Alpha coefficient, the thesis in turn analyzes and evaluates the similarities between students and lectures by conducting hypotheses about the average value of 2 independent samples (Independent Samples T-Test).

In Independent-samples T-test, we need to rely on the test of the equality of the two general variances (Levene's test). The variance describes the uniformity or unevenness (dispersion) of observed data.

- If value Sig. in Levene's test (F-test) <0.05, the variance of the 2 different integers uses t-test results in Equal variances not assumed.
- If Sig. ≥ 0.05, the variance of the 2 different integers is the same, then use the test results in Equal variances assumed.
- If Sig. of t-test ≤ α (significance level), there is a significant difference in the average of the two integers and vice versa.

3. Results

3.1. Status of physical education at HCMC University of Technology and Education

We have synthesized the value $\overline{X}$ of all variables in the same survey factor of two subjects, lecturers and students. The results are clearly shown in table 2 and Figure 1, Figure 2. Thereby, showing that, except for the two factors of Concern of the university leadership towards physical education (CON) and Collaboration between physical education faculty members and departments (COL) which having a statistically significant difference between the teacher and the student's opinion (Sig = .000 ~ .001 <.05), the remaining 7 factors have high consensus of these two subjects. The difference is not statistically significant (Sig = .000 ~ .001 <.05).

Table 2: Summary and comparison of average values of factors
through evaluation of lecturers (n = 20) and students (n = 320)

Index	Factors	Subjects	The sum of the observed variables			Comparation	
			$\overline{x}$	$\pm$ SD (Std. Deviation)	ε (Std Error Mean)	t	Sig. (2-tailed)
1	Curriculum of formal physical education	L	**4.21**	.496	.111	-1.285	**.200**
		S	**3.97**	.812	.045		
2	Documents and textbooks for teaching and learning	L	**2.3**	.987	.220	-.119	**.905**
		S	**2.28**	.709	.039		
3	Lecturer team	L	**4.04**	.413	.092	.876	**.382**
		S	**4.16**	.610	.034		
4	Method of teaching	L	**2.83**	.717	.160	-.337	**.736**
		S	**2.75**	.953	.053		
5	Examination and evaluation	L	**3.61**	.754	.168	1.341	**.181**
		S	**3.82**	.699	.039		
6	Facilities, yards, learning conditions	L	**2.54**	.933	.208	1.467	**.143**
		S	**2.84**	.905	.050		
7	Extracurricular activities	L	**3.41**	.847	.189	1.675	**.095**
		S	**3.72**	.812	.045		
8	Concern of the university leadership towards physical education	L	**2.28**	.790	.176	3.469	**.001**
		S	**2.93**	.824	.046		
9	Collaboration between physical education faculty members and departments	L	**2.33**	.616	.137	4.771	**.000**
		S	**3.17**	.772	.043		

Note: L: Lecturer; S: Student

The results also recorded, 4 factors: Curriculum of formal physical education (CUR); Lecturer team (LEC); Examination and evaluation (EXA); Extracurricular activities (EXT) have a value of mean ranging from 3.41 ~ 4.21 (range from Agree to Strongly Agree) and are all higher than the mean values of 5 factors: Documents and textbooks for teaching and learning (DOC); Method of teaching (MET); Examination and evaluation (EXA); Facilities, yards, learning conditions (FAC); Concern of the university leadership towards physical education (CON); Collaboration between physical education faculty members and departments (COL), with a value of only 2.28 ~ 3.17 (in the range from Disagree to Normal). These five factors have not yet been appreciated which means that attention should be paid to improvement measures.

3.2. Satisfaction level for physical education at Ho Chi Minh City University of Education and Technology

Survey of lecturers and students' satisfaction towards physical education conducted through 9 factors, corresponding to 9 comments in the questionnaire. The interview results are presented in Table 3 and Table 1 shows that lecturers and students' satisfaction rates for physical education are summarized in the following sequence:

SAT1_Satisfied with the content curriculum of the formal physical education (70% of teachers and 76.3% of students); SAT2_Satisfied with materials and curriculum for teaching and learning physical education (15.0% and 8.8%); SAT3_Satisfied with lectures team (55% and 71.9%); SAT4_Satisfied with lectures' teaching method (10% and 10.9%); SAT5_Satisfied with the evaluation of physical education (70% and 74%); SATL6_Satisfied with the condition of facilities and equipment (10% and 6.3%); SAT7_Satisfied with the effectiveness of extracurricular movements (60% and 70.6%);

SAT8_ Satisfied because of the physical education role is properly cared for by the university (45% and 80%); SAT9_Satisfied with the coordination between physical education lecturers and professional departments (25% and 27.5%).

Thus, it can be seen that the percentage of satisfaction level of the observed factors is much different and quite dispersed. In particular, SAT2, SAT4, SAT6, SAT8 and SAT9 are underestimated by both lecturers and students, so they should be noted for improved solutions.

It is even more obvious when comparing observed variables in the same object of lectures and student. The results showed that the level of "Hesitation" and "Disagreement" was more overwhelming than the level of "Completely agree" and "Agree" in factors of SAT2, SAT4, SAT6, SAT8 and SAT9, clearly shown in the indicators χ^2 calculated > χ^2 table (the difference was statistically significant with (P <0.01 ~ 0.001). But in contrast, there were also 4 out of 9 surveyed factors that lecturers and students' the opinions were approved at very high level; the levels of "Completely Agree" and "Agree" were more than the level of "Hesitation" and "Disagree" (P <0.01 ~ 0.001).

Matching and assessing the corresponding observed variables between lecturers and students found that, except for the variable SAT6_Satisfied for the conditions of facilities, service equipment has Sig = .042> .05), the remaining 8 variables belonging to the satisfaction factor of physical education have similar assessments' opinions. This is clearly shown by the index χ^2 calculated < χ^2 tabletables (the difference is not significant, not statistically significant with Sig = .169 ~ .959> .05).
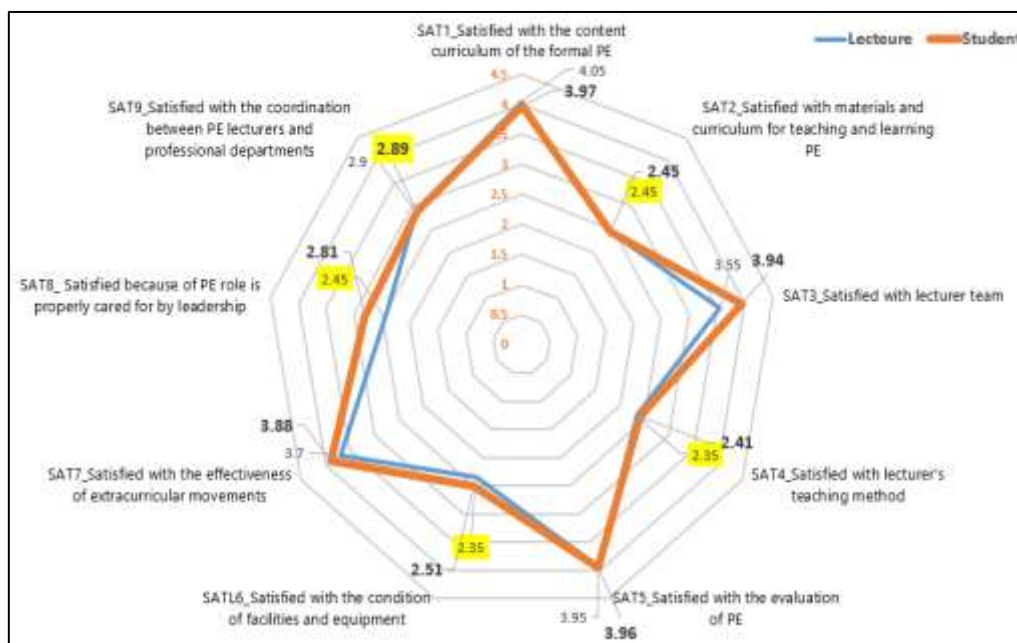

Figure 1: Compare the average value of lecturer and student's satisfaction on PE

Continue to compare the factors of lecturer and student's satisfaction level of physical education through the t-student index, shown in Table 3 and Figure 1. Through research, we found that, except SAT8 factor - Satisfied with the role of physical education

that are properly cared for by the leadership (Sig = .049 <.05), the remaining eight factors have no statistically significant difference between lecturer and student's opinions (Sig = .086 - .984> .05). Overall, both lecturers and students appreciate toward 4 factors SAT1, SAT3, SAT5 and SAT7 ($\overline{X}$ = 3.55 ~ 4.05, in the range of "Agreed"), while underestimating 5 remain factors: SAT2 SAT4, SAT6, SAT8, SAT9 ($\overline{X}$ = 2.35 ~ 2.90, in the range of "Disagree" to "Normal"). Again, these five factors have not met the expectations of both learners and teachers and need to be improved.

For further analysis, we have synthesized and compared the values of mean of all variables belong to survey factors along with lecturer and student's satisfaction. The results are clearly shown in Figure 2 and Figure 3. Thereby, it shows that the mean of the survey factors and the satisfaction level of 4 factors including PE curriculum, Lecturer team, PE examination and evaluation and Extracurricular movement activities are higher than the 5 remaining factors including: Documents and textbooks for teaching and learning PE, Teaching methods of PE teaching staff, Conditions of material facilities and equipment in service of PE, Attention of the leadership; Collaboration between PE faculty and professional departments.

Table 3: Assessing of lecturer and student's
satisfaction level toward physical education activities

Criteria	Object	N	Levene's Test for Equality of Variances		$\overline{X}$ (Mean)	± SD (Std. Deviation)	ε (Std Error Mean)	t	Sig. (2-tailed)
			F	Sig.					
SAT1_Satisfied with the content curriculum of the formal PE	Lecturer	20	1.363	.244	4.05	.826	.185	-.445	.656
	Student	320			3.97	.757	.042		
SAT2_Satisfied with materials and curriculum for teaching and learning PE	Lecturer	20	.364	.547	2.45	.759	.170	-.020	.984
	Student	320			2.45	.679	.038		
SAT3_Satisfied with lecture team	Lecturer	20	1.313	.253	3.55	1.146	.256	1.724	.086
	Student	320			3.94	.973	.054		
SAT4_Satisfied with lecturer's teaching method	Lecturer	20	.044	.834	2.35	.745	.167	.347	.729
	Student	320			2.41	.741	.041		
SAT5_Satisfied with the evaluation of PE	Lecturer	20	.019	.890	3.95	.887	.198	.059	.953
	Student	320			3.96	.923	.052		
SATL6_Satisfied with the condition of facilities and equipment	Lecturer	20	1.072	.301	2.35	.813	.182	1.043	.298
	Student	320			2.51	.653	.036		
SAT7_Satisfied with the effectiveness of extracurricular movements	Lecturer	20	.354	.552	3.70	.923	.206	.851	.395
	Student	320			3.88	.907	.051		
SAT8_ Satisfied because of PE role is properly cared for by leadership	Lecturer	20	3.047	.082	2.45	.510	.114	1.975	.049
	Student	320			2.81	.796	.044		
SAT9_Satisfied with the coordination between PE lecturers and professional departments	Lecturer	20	.140	.709	2.90	.912	.204	-.045	.964
	Student	320			2.89	.908	.051		

Thus, it can be concluded that these five factors must be seriously considered as a basis for proposing innovative solutions to strengthen PE efficiency at HCMC University of Education and Technology.
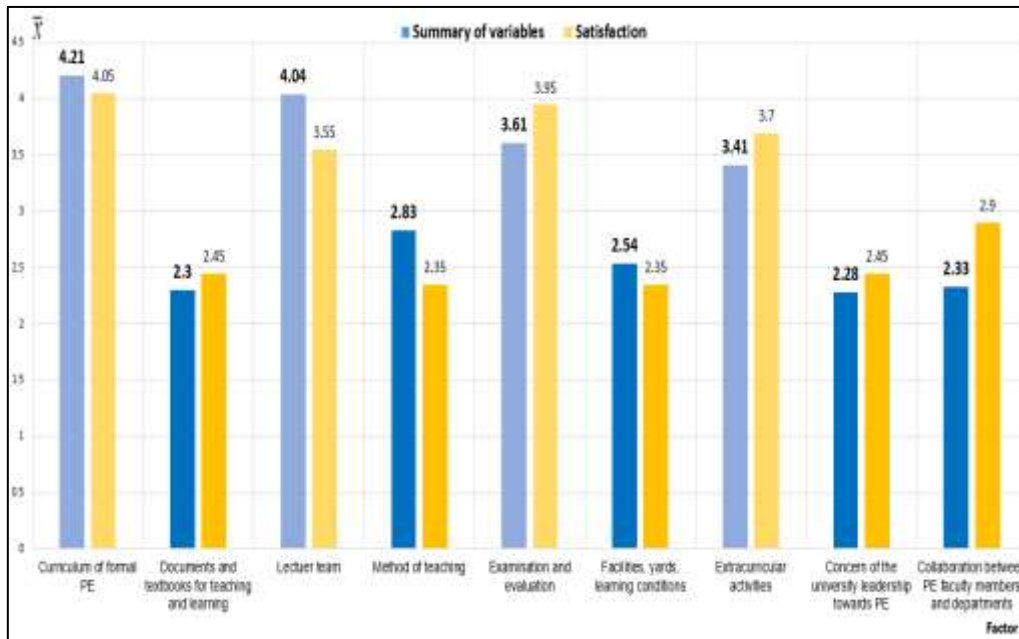
Figure 2: Comparing the average value between the aggregate
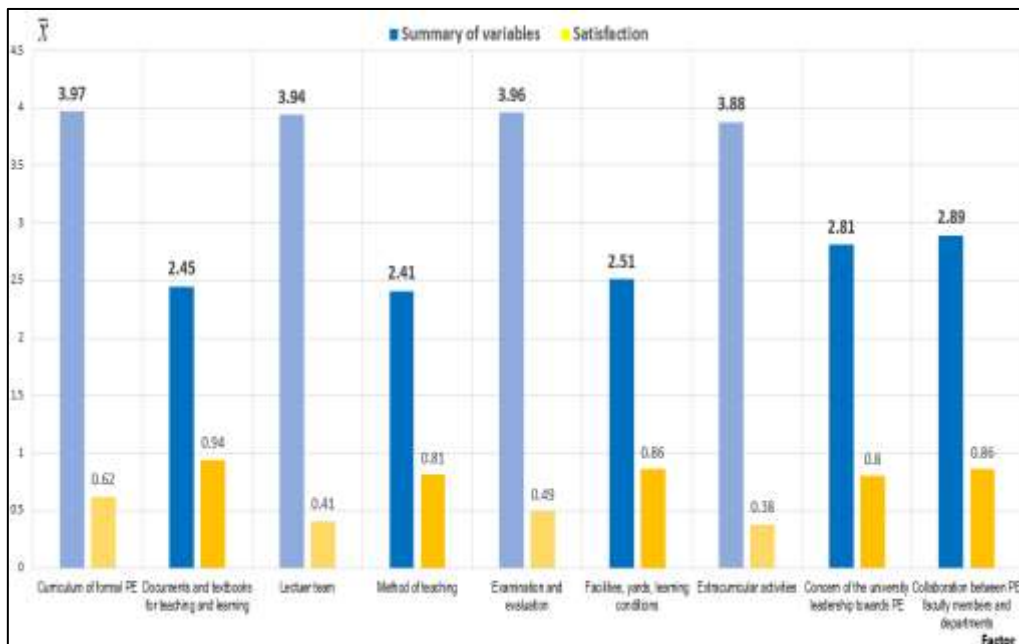of the survey factors and lecturer's PE satisfaction (n = 20)

Figure 3: Comparing the average value between the aggregate
of the survey factors and student's PE satisfaction (n = 320)

4. Conclusion

The project has designed measurement tools with Likert scale - 5 levels; followed by measuring the reliability of observed variables by Cronbach's Alpha coefficient; Finally, 9 factors and 44 variables were synthesized to investigate the situation of PE at Ho Chi Minh City University of Technology and Education.

Based on the actual survey, combined with comparing of lecturer and student's satisfaction with the factors surrounding PE, our research has discovered factors that have not been appreciated and need to be considered to change. These factors consist of Documents, syllabus for teaching and learning PE; Teaching methods; Conditions of facilities, equipment; The concern of the school leaders for PE work; Collaboration between PE lecturers and professional departments. This is a reliable basis for the research step to find improved solutions later.

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