



THE SOLUTION TO IMPROVE THE EFFECTIVENESS OF PHYSICAL EXAMINATION AND EVALUATION FOR STUDENTS OF HCMC UNIVERSITY OF TECHNOLOGY AND EDUCATION

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Abstract:

On the basis of studying the status of physical examination and evaluation of students of the HCMC University of Technology and Education, the topic investigated the level of satisfaction of students and lecturers and investigated the causes. From there, the research propose some feasible solutions to improve this activity.

Keywords: evaluation, physical education, examination, students, HCMUTE

1. Introduction

Physical education is one of the important subjects in the general training program with the role of creating a class of people who not only have new knowledge, are capable, have political qualities but also have abundant health to meet professional requirements. Therefore, in order to contribute to improving the quality of training in universities, along with the renovation, improvement of training programs, contents and methods, it is necessary to reform the physical examination and evaluation forms of student.

Resolution 29 has been approved by the 8th Central Conference on November 4, 2013, indicating: "*fundamentally innovating the form and method of examination, examining and evaluating the results of education, training and protection to be honest and objective*". In addition, "Education development strategy 2011 - 2020" also stated that one of the shortcomings and weaknesses of Vietnamese education in the past period is "*content of*

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the program and teaching and learning methods, work Exams, tests and evaluations are slowly being renewed".

HCMC University of Technology and Education is a multidisciplinary, multi-disciplinary university in the direction of career - application, in which a number of training areas are oriented to research and development. The school is managed and managed according to ISO 9001: 2000. With a scale of more than 20,000 people studying in the system, but the work of physical examination and evaluation of the students is still not regulated; There is no standard to specifically evaluate students' physical capacity on a yearly basis; There are also no surveys and serious studies on the organization of physical examination and evaluation of learners of this subject. From the above reasons, we would like to implement the topic: "Research on solutions to improve the effectiveness of student physical examination and evaluation at the HCMC University of Technology and Education". Research results will be the basis for evaluating the physical work of the annual students and the premise to adjust and improve the testing and evaluation methods for the benefit of the learners, contributing to improving public efficiency. school physical education.

2. Methods

2.1. Research objects

The research objects consist of 19 staffs, lecturers of the Physical Education Center - National Security and 300 male and female students, of non-specialized majors with normal physical health in HCMC University of Technology and Education, participating in physical education.

2.2. Process

The study was carried out from March, 2018 to March, 2019 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; observation method; 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: Totally agree (5 points); Agree (4 points); Neutral (3 points); Disagree (2 points); Strongly disagree (1 point). In particular, the average value = (maximun - minimun) / 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	Totally agree

B. Reliability measurement using Cronbach’s Alpha coefficient

Cronbach’s Alpha coefficients (Cronbach, 1951) are the reliability coefficients used to test the correlation scale between observed pairs. This method 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]. In theory, the higher the coefficient, the better (the higher the reliability scale). However, this is not entirely accurate. The Cronbach’s Alpha coefficient is too large (range from 0.95 or more) to show that there are many variables in the scale that do not differ at all, this phenomenon is called duplication in the scale.

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 topic, the author 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.

After examining the reliability of observed variables according to the criteria for evaluating physical education subjects in school 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 0.610 to 0.876), 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.

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

Index	Factor	Symbol	Initial observation variable	Remain observation variable	Cronbach's Alpha	Eliminated variables
1	Understanding examination and evaluation	UND	5	5	.701	
2	Requirements of examination and evaluation	REQ	5	5	.810	
3	Rules of examination and evaluation	RUL	5	5	.829	
4	Methods of examination and evaluation	MET	5	5	.813	
5	Forms of examination and evaluation	FOR	5	5	.721	
6	Contents of examination and evaluation	CON	5	5	.763	
7	Tools of examination and evaluation	TOO	6	6	.834	
8	Compilation exam questions / tests	COM	5	5	.843	
9	Feedbacks on testing results	FEE	5	5	.822	
10	Adjusting teaching and learning activities	ADJ	5	4	.876	1 variable (ADJ5_ There are absolutely no adjustments)
11	Storing data of examination and evaluation results	STO	5	5	.806	
12	Applying tests according to Decision 53/2008 / QD-BGDDT	APP	6	6	.895	
13	Satisfaction rate	SAT	5	5	.831	
14	Causes affecting the examination and evaluation	CAU	5	5	.797	
15	Solutions for improving	SOL	6	5	.610	1 variable (SOL6_Another ideas)

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.

The most common form of inspection statistics is:

$$\chi^2 = \sum_{i=1}^n \frac{(O - E)^2}{E}$$

Where :

O is the observation frequency (measurement data) ;

E is the theoretical frequency (exact predictive value) .

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. \geq 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 \leq 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 examination and evaluation at HCMC University of Technology and Education

After completing the evaluation tool, the topic proceeds to collect and process data according to each specific standard:

- Understanding of lectures and students about the meaning and role of physical examination and evaluation
- Understanding the meaning, role of physical education examination and evaluation, includes 5 elements, corresponding to 5 comments in the questionnaire.

Table 2: Lectures' understanding (n = 19) and students (n = 300)
 on the meaning and role of physical education testing and evaluation

Criteria	Object	Level (totally) agree		The level of hesitation and disagreement		Comparing the same object		Comparing χ^2 between teachers and students	
		n_i	%	n_i	%	χ^2	P	(Value)	(Sig)
UND1_ Needed to classify learners' qualifications	S	225	75	75	25	187.5	<0.001	2.11	.714
	L	14	73.7	5	26.3	11.6	<0.001		
UND2_ Accurately evaluate the health status of students	S	255	85.0	45	15.0	223.5	<0.001	12.29	.015
	L	12	63.2	7	36.8	10.1	<0.01		
UND3_ Basis for fair evaluation of the mobilization capacity of students	S	238	79.3	62	20.7	201.6	<0.001	4.24	.374
	L	13	68.4	6	31.6	10.7	<0.01		
UND4_ Determining professional achievements and encouraging students to rise in learning and training	S	229	76.3	71	23.7	191.6	<0.001	2.21	.697
	L	13	68.4	6	31.6	10.7	<0.01		
UND5_ Created competitive environment in students	S	190	63.3	11	36.7	160.6	<0.001	3.69	.448
	L	14	73.7	5	26.3	11.6	<0.001		

The interview results are presented in Table 2: 75% of students understand that physical examination and evaluation is necessary to classify learners' qualifications; 85% of students are aware that this work helps to accurately evaluate the health status of students; 79.3% of students said that it is the basis of fair evaluation of the mobilization capacity of students; 76.3% of students said that it will determine professional achievements and encourage students to rise in learning and training; 63.3% of students understand that they will create competition in students.

Comparing the observation of the observed variables in the same student object, the level (totally) agreed to prevail over the level of hesitation and disagreement. This is clearly shown through the χ^2 indicator always $> \chi^2$ tables (the difference is statistically significant with $P < 0.01 \sim 0.001$).

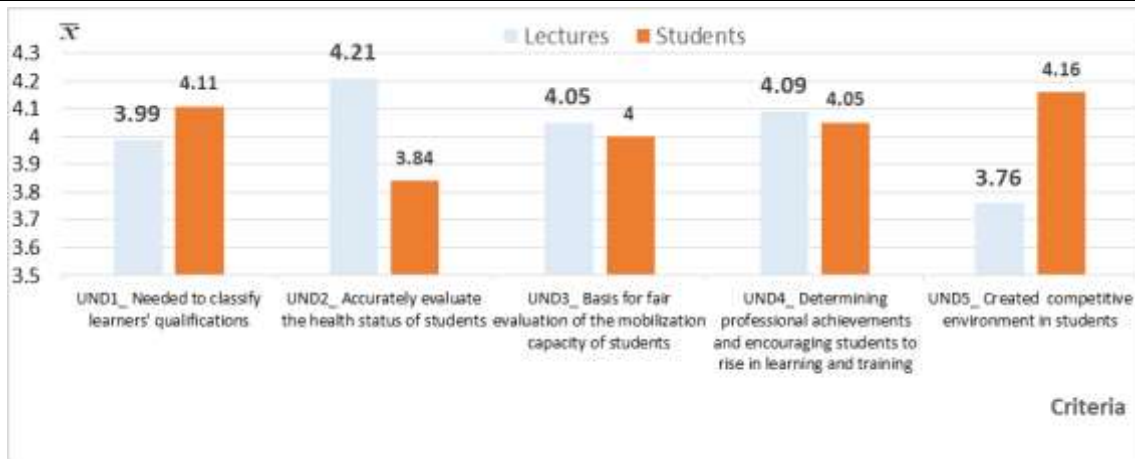


Chart 1: Comparison of lectures' s average knowledge values (n = 19) and students (n = 300) on the meaning and role of physical education examination and evaluation

Comparative identification of observed variables between students and lectures found that, in addition to the Ud2 variable, it helps to accurately evaluate the health status of students (there are statistical differences with $P < 0.05$), the remaining 4 variables are all There is a similarity in the level of understanding the meaning and role of physical education examination and evaluation. This is clearly shown through the χ^2 indicator always $< \chi^2$ tables (the difference is not statistically significant with $\text{Sig} > .05$).

This is even more apparent when comparing \bar{x} observed variables between students and lectures through the t student indicator. Research results in table 3 and Chart 1 also show that observed variables are highly appreciated by students and lectures. The average value (\bar{x}) of the observed variables ranged from 3.76 - 4.21, in which the criteria that were most appreciated by students were "UND2_Help accurately evaluate student health" with $\bar{x} = 4.21$... lowest is the criteria "UND5. Create competition in students" with $\bar{x} = 3.76$. It can be seen that there is no \bar{x} difference of observed variables between lectures and students ($\text{Sig} = .015 \sim .714 > .05$).

Table 3: Comparative understanding of lecturers (L) and students (S) on the meaning and role of physical examination and evaluation

Criteria	Object	N	Levene's Test for Equality of Variances		\bar{x} (Mean)	\pm SD (Std. Deviation)	ϵ (Std Error Mean)	t	Sig. (2-tailed)
			F	Sig.					
UND 1_ Needed to classify learners' qualifications	S	300	.038	.846	3.99	.968	.056	-.493	.622
	L	19			4.11	.809	.186		
UND 2_ Help accurately evaluate student health	S	300	.149	.700	4.21	.878	.051	1.80	.073
	L	19			3.84	.765	.175		
UND 3_ Basis for fair evaluation of the mobilization capacity of students	S	300	.026	.871	4.05	.927	.054	.245	.807
	L	19			4.00	.816	.187		

UND 4_ Determining professional achievements and encouraging students to rise in learning and training	S	300	.000	.987	4.09	.914	.053	.158	.875
	L	19			4.05	.848	.195		
AH5_ Created competitive environment in students	S	300	.836	.361	3.76	1.03	.060	-1.645	.101
	L	19			4.16	.834	.191		

Thus, both lecturers and students have a good understanding and a high consensus on the meaning and role of physical education and evaluation in all 5 variables observed with $\bar{x} = 3.76 \sim 4.21$ (in the range of scales from Agree to Totally agree).

Similar analysis recorded:

A. Current situation of ensuring the requirements of physical education examination and evaluation

Both lectures and students have a high consensus on the requirements of physical education examination and evaluation. Those are the requirements for: Recreating physical education knowledge; Train skills and movement skills; Developing cognitive and creative thinking capabilities; Creating the attitude and behavior of students for the subject; Train students to detect and solve problems with $\bar{x} = 3.53 \sim 4.22$ (in the range of scales from Agree to Totally agree).

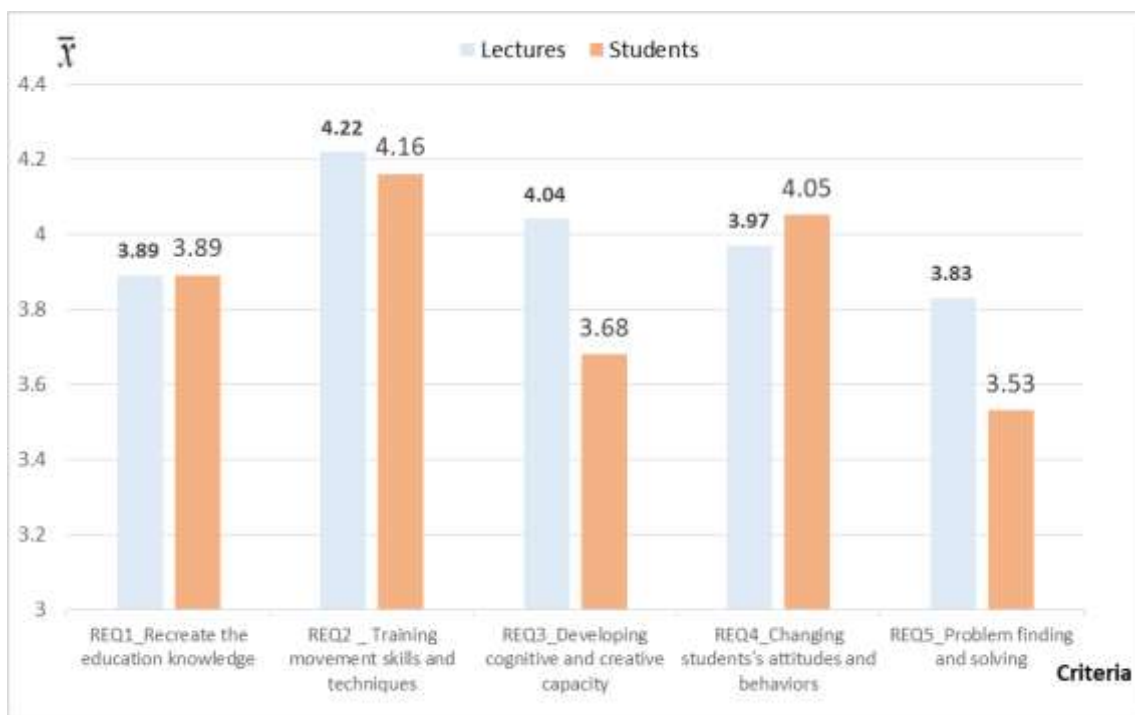


Chart 2: Comparison of average value to ensure the requirements of physical education examination and evaluation between teacher (n = 19) and students (n = 300)

B. Current situation of ensuring the principles of physical education examination and evaluation

Lectures and students have a high consensus on the requirements of physical education examination and evaluation. Those are the requirements for: Recreating physical education knowledge; Train skills and movement skills; Developing cognitive and creative thinking capabilities; Creating the attitude and behavior of students for the subject; Train students to detect and solve problems with $\bar{x} = 3.53 \sim 4.22$ (in the range of scales from Agree to Totally agree).

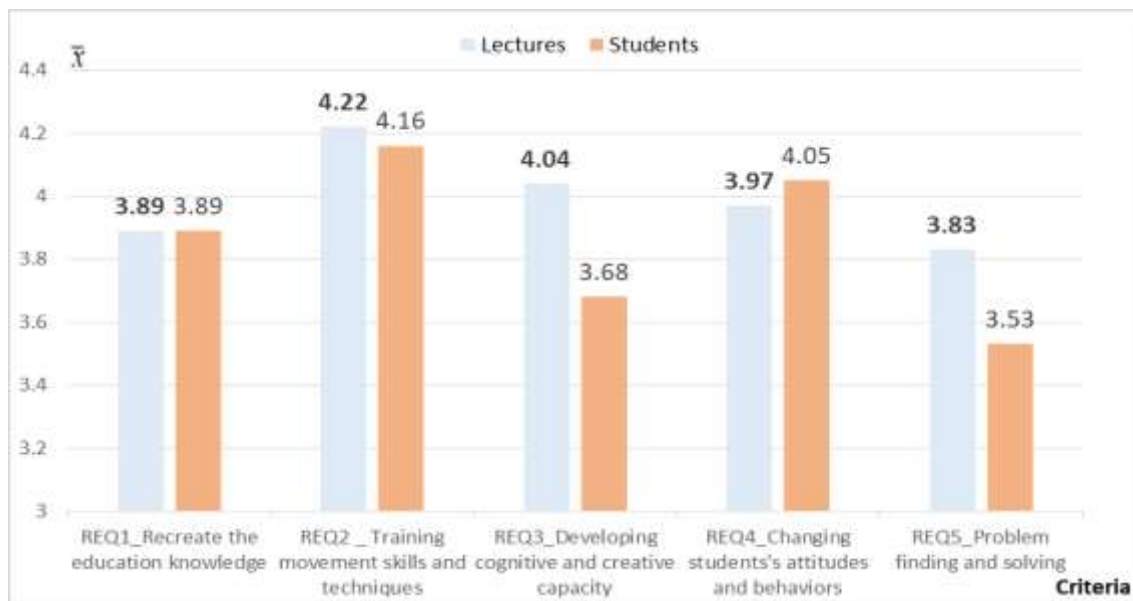


Chart 3: Comparison of average value ensures the principles of physical education examination and evaluation between lectures (n = 19) and students (n = 300)

C. Current situation of using physical examination and evaluation methods for students

Although there are many differences between teachers and students in the opinions of variables using methods of student physical examination and evaluation ($\bar{x} = 1.95 \sim 4.89$ in the range of scales ranging from Not agreeing to Completely agree), but in general, they have the highest consensus on the method of practice test.

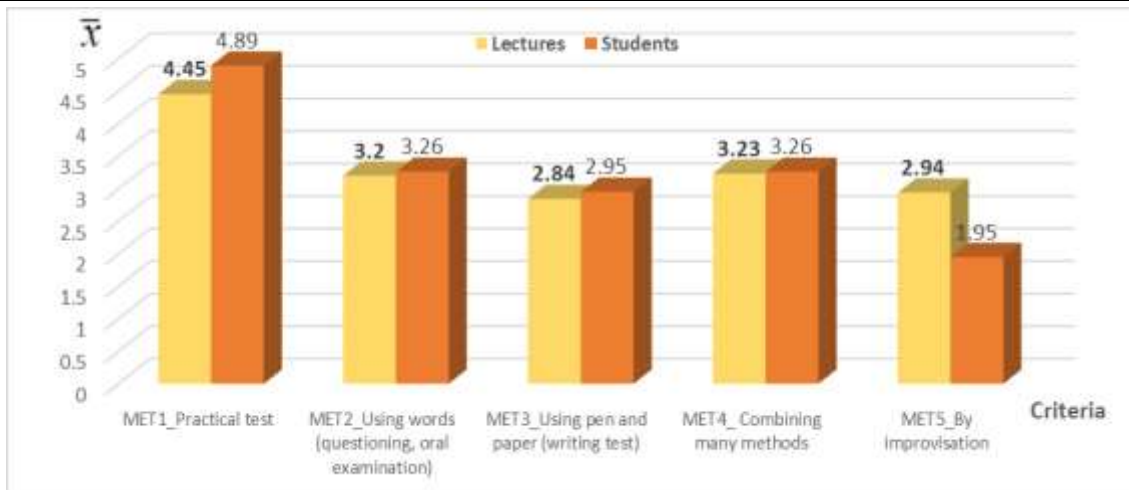


Chart 4: Comparison of the average value of actual situation using the methods of physical examination and assessment of students

D. Current situation of using physical examination and evaluation forms for students

Up to 35.7% of students evaluate that some lectures still use unified evaluation forms. However, both lectures and students have a high consensus on two forms of conducting physical education examination and evaluation, which are: periodic evaluation and summation evaluation. Other forms are rarely used. $\bar{x} = 2.16 \sim 4.42$ (in the range of scales extending from Disagree to Totally agree).

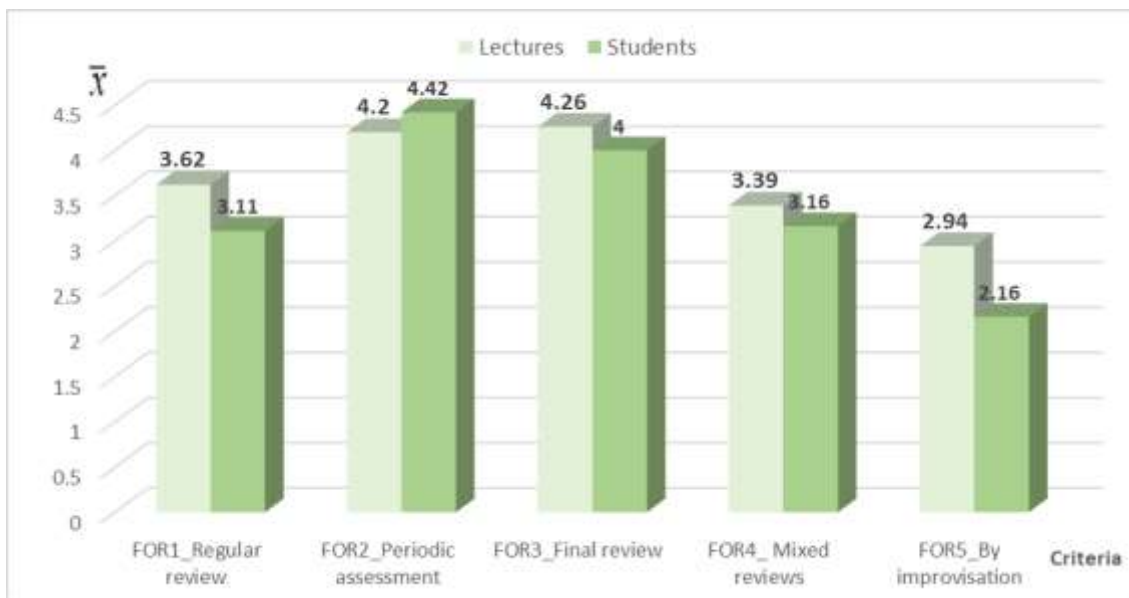


Chart 5: Comparison of the average value of actual use of physical examination and evaluation forms of students

E. Current situation of students' physical examination and evaluation contents

Comparing the observed variables in the same student object, the level (totally) agrees to be more dominant than the level of hesitation and disagree in 4 contents: General knowledge; Technical, Tactical; Physical. This is evident in the equilibrium χ^2 indicator

$> \chi^2$ tables (the difference is statistically significant with $P < 0.001$). Particularly, psychological level of hesitation and disagreement prevails more than the (totally) agreed level. This result is quite close to the reality of teaching physical education at the University (not specialized in sports) so it does not pay much attention to psychological and tactical issues in training and sports competitions.

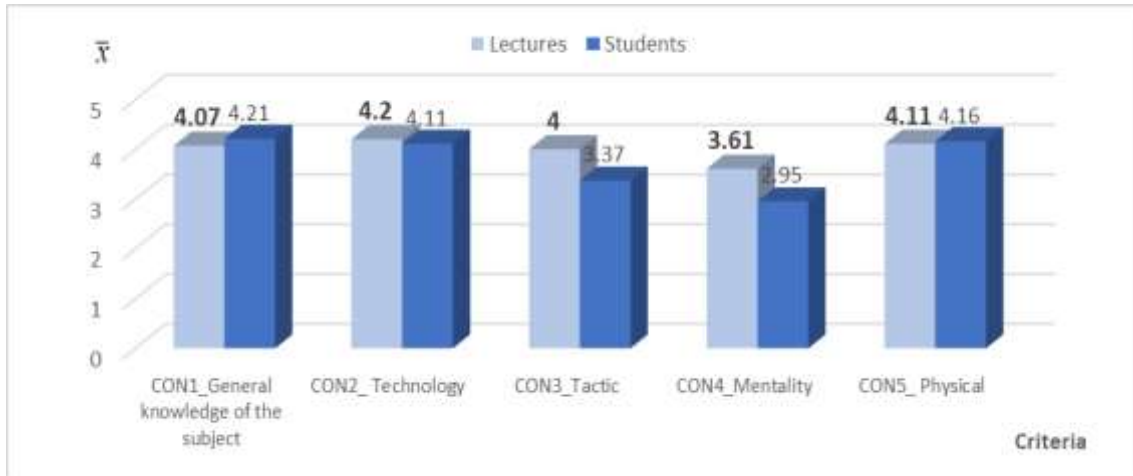


Chart 6: Comparison of average value of actual use of physical examination and evaluation contents of students

E. The tools used to examine and evaluate physical education

In general, students and lectures evaluated quite differently on the 6 observed variables, $\bar{x} = 2.79 \sim 4.58$ (in the range of scales stretching from Neutral to Totally agree). However, there is a high consensus about the popular tools are used to examine and evaluate physical education are physical education tests.

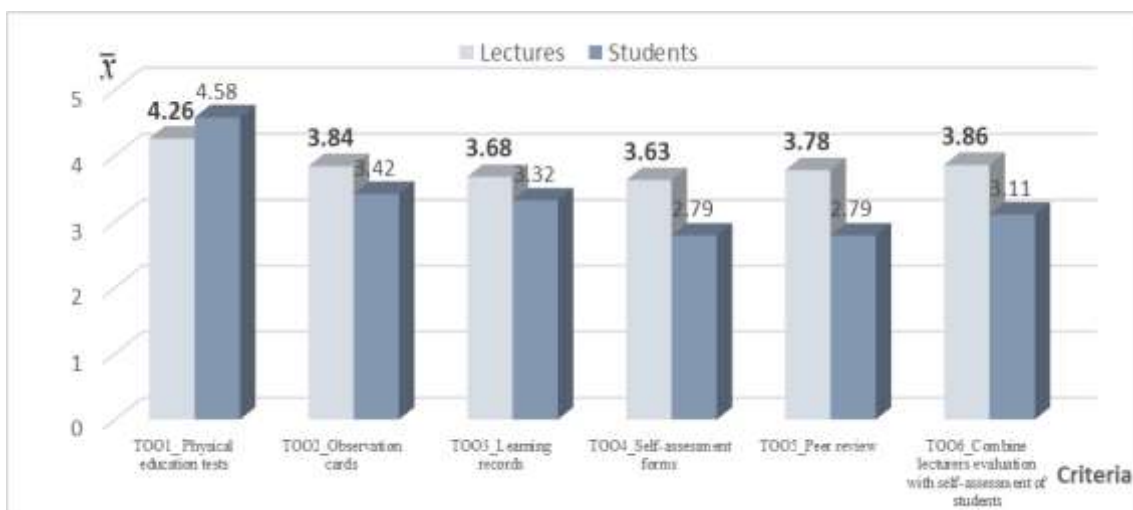


Chart 7: Comparison of actual average status using student physical examination and evaluation tools

F. Compiling and publishing exam questions for physical education examination and evaluation

Both lectures and students have a high consensus on the compilation and preparation of physical education tests and assessments towards: Keeping abreast of professional knowledge; Associated with skills to be trained and taught; Pay attention to learning attitudes; Check and evaluate for the progress of learners. $\bar{x} = 3.74 \sim 4.37$ (in the range of scales extending from Agree to Totally agree).

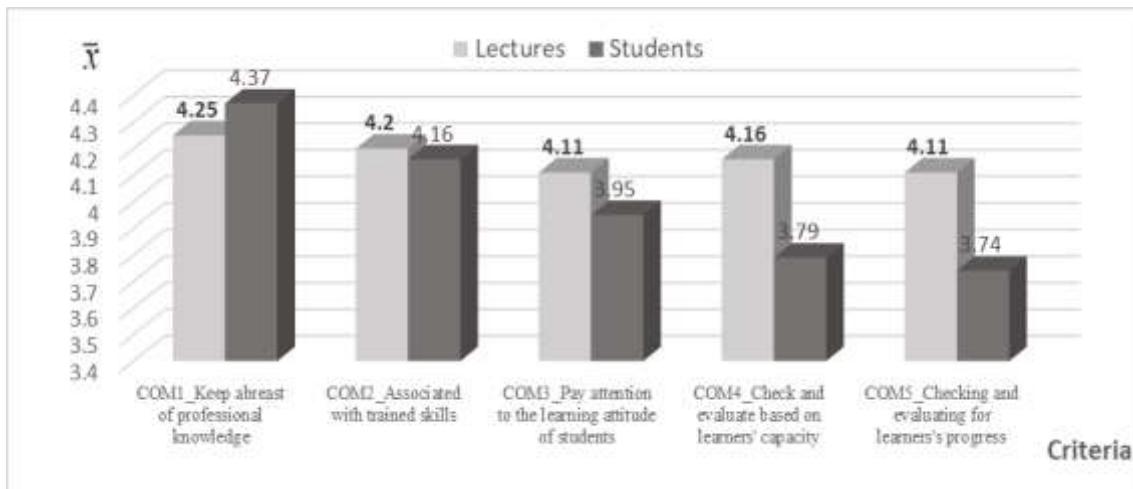


Chart 8: Comparison of the average value of the situation of compiling, publishing of tests for physical education examination and evaluation

G. Analyzing and processing examination and evaluation results, giving a feedback to students

Evaluation of students and lectures is quite different in terms of 5 observed variables, $\bar{x} = 1.74 \sim 4.16$ (in the range of scales extending from Strongly disagree to Totally agree). But in general, both lectures and students have a high consensus that they think that analyzing and processing results of assessment and feedback takes place right after the examination and evaluation of physical education subjects.

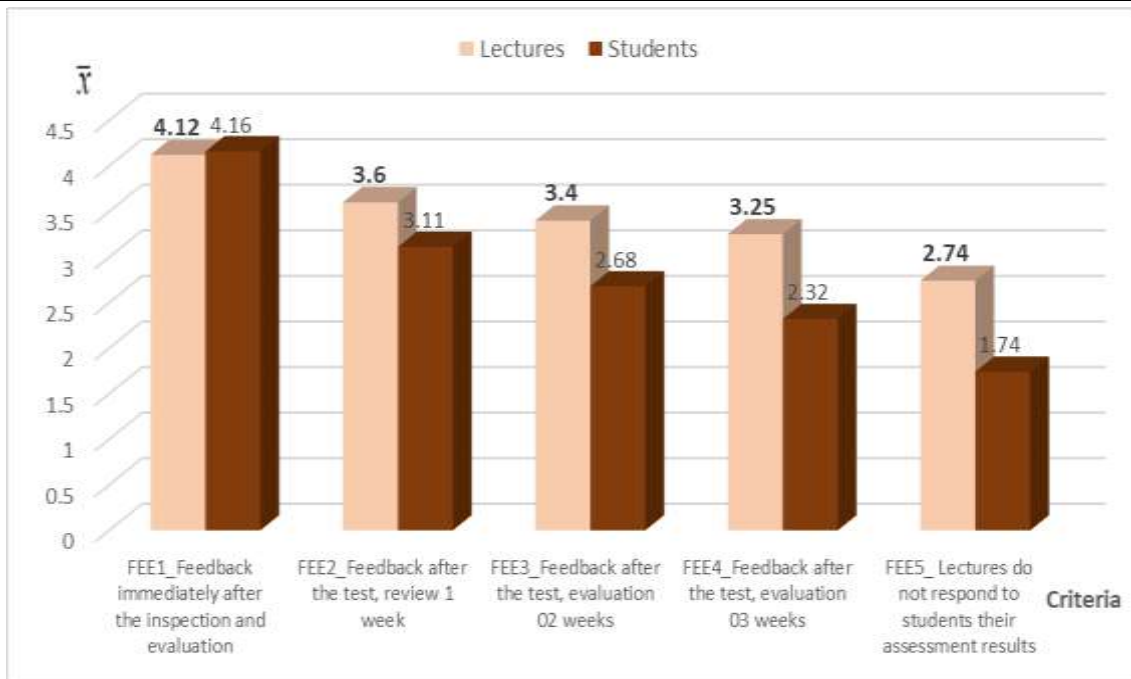


Chart 9: Comparison of the average status of the analysis and processing of test results and giving a feedback to students

H. Using the results of students' physical examination and assessment to adjust teaching and learning activities

Evaluation of students and lectures has some differences in 5 observed variables, $\bar{x} = 3.37 \sim 4.16$ (in the range of scales extended in the Agreed level). However, there is a high consensus among them that the use of students' physical examination and evaluation results to adjust the course content and teaching methods as well as adjust the content and form of examination.

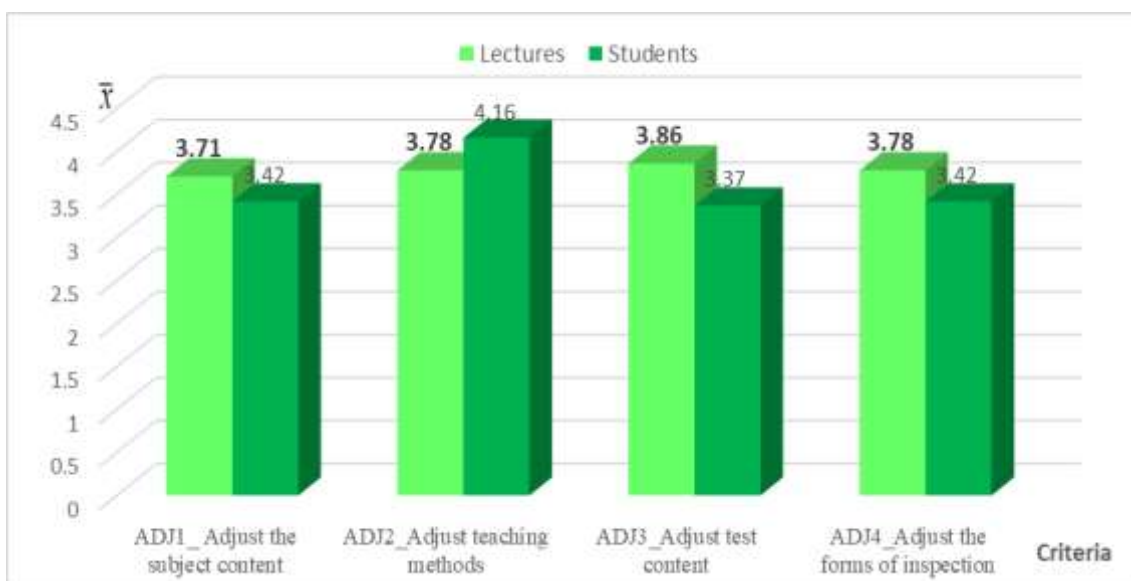


Chart 10: Comparison of average value of actual use of students' physical examination and evaluation results to adjust teaching and learning activities

I. Store data of physical education examination and evaluation

Students and lectures evaluated quite differently on 5 observed variables, $\bar{x} = 2.58 \sim 4.32$ (in the range of scales extending in Neutral to Totally agree level). However, through analysis and comparison, both lectures and students have a high consensus when they think that the archiving of test data and evaluation of physical education is mainly through record books.

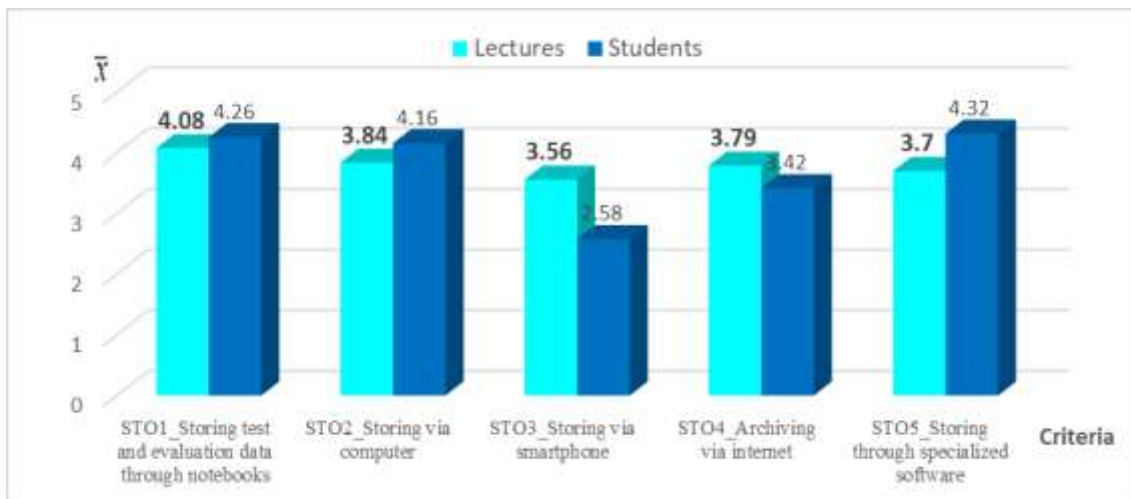


Chart 11: Comparison of the average value of storing data of physical education examination and evaluation

J. Applying tests to examine and evaluate student fitness according to Decision 53/2008/QD-BGDDT

Through analysis and comparison, both lectures and students have consensus on the application of 6 tests to examine and evaluate students' fitness according to Decision 53/2008/QD-BGDDT. Both students and lectures highly appreciate all 6 observed variables, $\bar{x} = 3.21 \sim 4.68$ (in the scale of Agree and Totally agree).

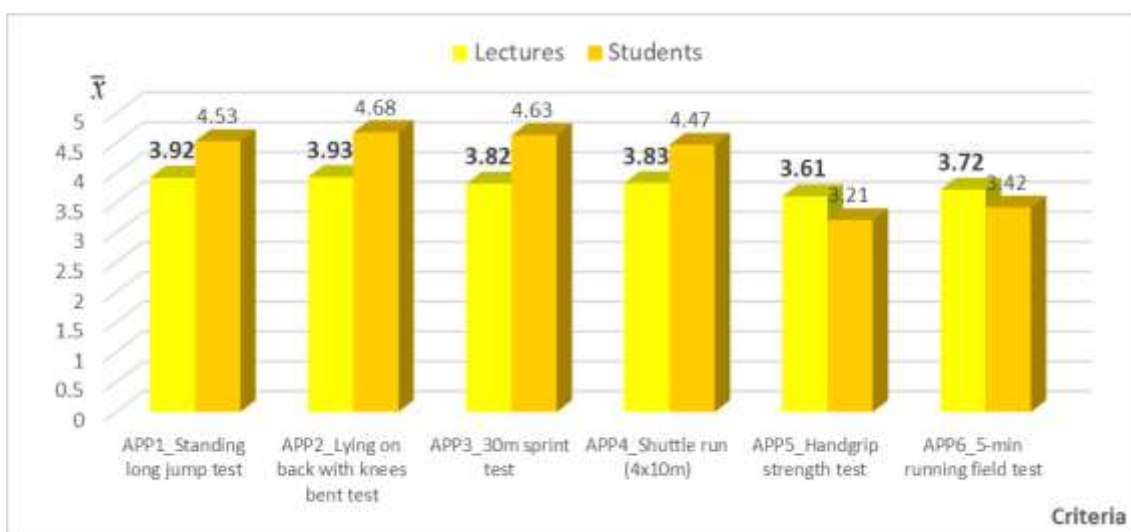


Chart 12: Comparison of the average value of applying tests to examine and evaluate student fitness according to Decision 53/2008/QD-BGDDT

3.2. Satisfaction and causes affecting the inspection and assessment of physical education

3.2.1. Satisfaction of students and lectures for physical education examination and evaluation

Survey of students' satisfaction with physical education examination and evaluation is conducted through 5 factors, corresponding to 5 comments in the questionnaire.

Comparing \bar{x} observed variables on the satisfaction level of lectures and students on the examination, assessing physical education through t student index, found that: There is no significant difference between the opinions of students and lectures (Sig = .081 - .893 > .05). Overall, both students and lectures highly appreciated all 5 observed variables, $\bar{x} = 3.84 \sim 4.25$ (in the range of scales from Agree to Totally agree).

Therefore, through analysis and comparison, both lectures and students have a high consensus on the level of satisfaction with the inspection and assessment of physical education, namely: Ensuring objectivity, comprehensive, systematic, publicity, development (highest); Next is the qualifications of lectures; Conditions of facilities and equipment for examination and evaluation; Serious, friendly and proper attitude of lectures; Obtain physical and mental benefits after participating in the subject.

Table 4: Comparison of satisfaction level on physical examination and evaluation of students

Criteria	Object	N	Levene's Test for Equality of Variances		\bar{x} (Mean)	\pm SD (Std. Deviation)	ϵ (Std. Error Mean)	t	Sig. (2-tailed)
			F	Sig.					
SAT1_ Ensuring objectivity, comprehensive, systematic, publicity, development	S	300	.046	.831	4.25	.767	.044	.777	.438
	L	19			4.11	.809	.186		
SAT2_ Professional qualifications of lectures	S	300	5.231	.023	4.17	.749	.043	1.247	.228
	L	19			3.84	1.119	.257		
SAT3_ Conditions of facilities and equipment for examination and evaluation	S	300	1.510	.220	3.94	.978	.056	1.753	.081
	L	19			3.53	1.172	.269		
SAT4_ Serious, friendly and proper attitude of lectures	S	300	1.222	.270	4.09	.753	.043	1.098	.273
	L	19			3.89	.937	.215		
SAT5_ Obtain physical and mental benefits after participating in the subject	S	300	.044	.834	3.97	.941	.054	-1.135	.893
	L	19			4.00	.882	.202		

3.2.2. Causes affecting the examination and evaluation of physical education

The results of statistical and quantitative analysis of the thesis have affirmed the reality that both students and lectures have a certain level of satisfaction with the examination and evaluation of physical education. However, in terms of the level of influence of

components that constitute this work quality scale, there are also factors that are evaluated by students at a low level. Therefore, the next step is to understand the causes to improve the quality of physical education examination and evaluation.

Surveying the causes affecting the physical education examination and evaluation is conducted through 6 factors, corresponding to 5 comments in the questionnaire.

Interview results (appendices 1 and 2), presented in Table 5 are recorded, the percentage of students evaluating the causes of physical education examination and evaluation is as follows: CAU1_Training and equipment for subjects (79%); CAU2_Content, test used for evaluation (75.3%); CAU3_Measures, machines and measuring tools (70.3%); CAU4_Qualifications, attitudes and methods of lectures (72.3%); CAU5_Weather conditions (71.3%).

Comparing the observed variables in the same student object, the level (completely) agrees to be more dominant than the level of hesitation and disagreement in all 5 variables of the cause that affects the examination, evaluation physical education. This is evident in the equilibrium χ^2 indicator $> \chi^2$ tables (the difference is statistically significant with $P < 0.001$). Meanwhile, except for variable CAU4, the remaining variables of lectures are similar to students ($P < 0.01 - 0.001$).

Table 5: Current situation of causes affecting the inspection and assessment of physical education

Criteria	Object	Level (totally) agree		The level of hesitation and disagreement		Comparing the same object		Comparing χ^2 between lectures and students	
		n_i	%	n_i	%	χ^2	P	(Value)	(Sig)
CAU1_Training field and equipment for subjects	S	237	79.0	63	21.0	200.4	<0.001	.1563	.815
	L	15	79.0	4	21.1	12.68	<0.001		
CAU2_Content, tests used to evaluate	S	226	75.3	74	24.7	188.5	<0.001	5.190	.268
	L	11	57.9	8	42.1	9.73	<0.01		
CAU3_Measures, machines and measuring tools	S	211	70.3	89	29.7	174.8	<0.001	7.748	.101
	L	9	47.4	10	52.6	9.52	<0.01		
CAU4_Qualification, attitudes and methods of lectures	S	217	72.3	83	27.7	179.9	<0.001	5.319	.256
	L	11	57.9	8	42.1	9.73	<0.01		
CAU5_Weather conditions	S	214	71.3	86	28.7	177.3	<0.001	4.871	.301
	L	11	57.9	8	42.1	9.73	<0.01		

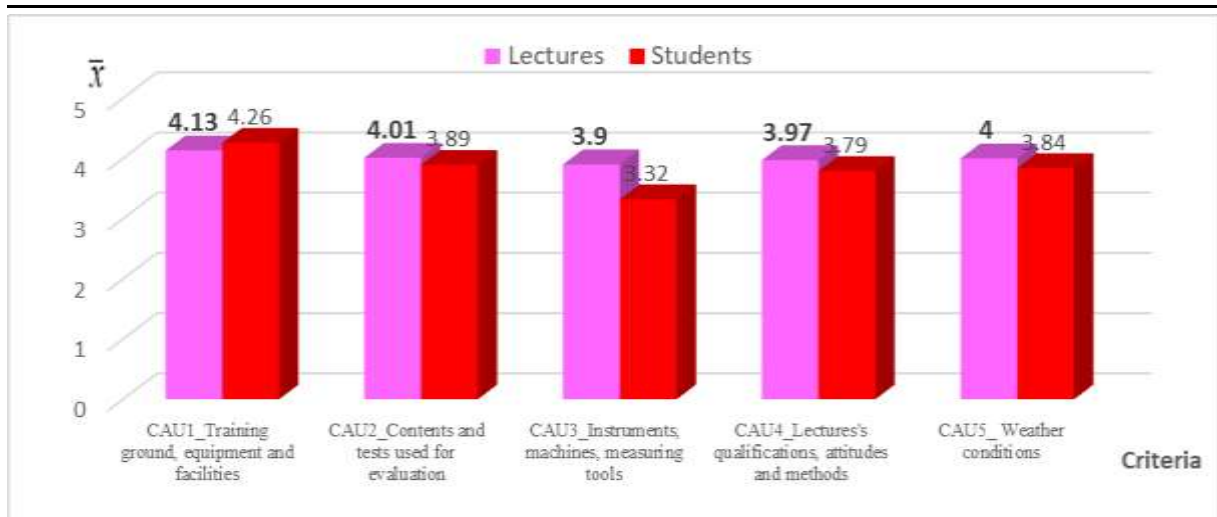


Chart 13: Comparison of average value of reasons affecting physical Education examination and evaluation

The comparison of observing the corresponding observed variables between the two students and lectures found that all 5 variables that are affected by the physical education examination and evaluation have similarities in the assessment. This is evident in the χ^2 -indicator always $< \chi^2$ tables (insignificant difference, not statistically significant with Sig = .101 - .815 > .05).

Comparing \bar{x} observed variables on the causes of testing, assessing physical education between students and lectures through t student indicator (Chart 13); There is a statistically significant difference (Sig = .000 - .020 < .05) in only variable CAU3_ Measures, machines and measuring tools, between opinions of students and lectures (Sig = .014 < .05); The remaining 4 variables have high similarity (Sig = .495 - .585 > .05). However, overall, both students and lectures highly appreciated all 5 observed variables, $\bar{x} = 3.32 \sim 4.26$ (in the range of scales from Neutral to Totally agree).

Thus, through analysis and comparison, both lectures and students have a high consensus when identifying the causes affecting the examination and evaluation of physical education are: training field and equipment for subjects (highest); Next is the Content, the test used to evaluate; Means, machinery and measuring tools; Qualifications, attitudes and methods of lectures; Weather conditions.

3.3. Solutions to improve the effectiveness of physical education examination and evaluation at HCMC University of Technology and Education

After understanding the causes affecting the examination and evaluation of physical education, the topic continues to implement the last step is to survey the opinions of students and lectures to find solutions to improve the effectiveness of physical education examination and evaluation. This factor is conducted through 5 factors, corresponding to 2 statements in the questionnaire (Agree: 1 point; Disagree: 0 point). Interview results (appendices 1 and 2) are presented in Table 6, recorded, the rate of selection of solutions is as follows: SUL1_Increasing investment in facilities, yards,

equipment for teaching - study (93.3%); SUL2_Improve the professional qualifications and attitudes of lectures when examining and evaluating (87%); SUL3_Update documents and teaching materials (80.3%); SUL4_Innovation teaching method to make students become more positive (85.7%); SUL5_Change content, curriculum according to students' interests to improve the interests of students (90.3%).

Table 6: Actual situation of selecting solutions to improve physical Education examination and evaluation

Criteria	Object	Agree		Disagree		Comparing the same object		Comparing χ^2 between lectures and students	
		n_i	%	n_i	%	χ^2	P	(Value)	(Sig)
SUL1_Increasing investment in facilities, yards, equipment for teaching and learning activities	S	280	93.3	20	6.7	262.6	<0.001	1.351	.619
	L	19	100.0	0	0.0	19	<0.001		
SUL2_Improve the professional qualifications and attitudes of lectures when examining and evaluating	S	261	87.0	39	13.0	232.1	<0.001	2.814	.145
	L	19	100.0	0	0.0	19	<0.001		
SUL3_Update documents and teaching materials	S	241	80.3	59	19.7	205.2	<0.001	.965	.546
	L	17	89.5	2	10.5	15.42	<0.001		
SUL4_Innovation teaching method to make students become more positive	S	257	85.7	43	14.3	226.3	<0.001	1.236	.490
	L	18	94.7	1	5.3	15.42	<0.001		
SUL5_Change content, curriculum according to students' interests to improve the interests of students	S	271	90.3	29	9.7	247.6	<0.001	2.020	.236
	L	19	100.0	0	0.0	19	<0.001		

Comparing the observed variables in the same student object, the level (totally) agrees to be more dominant than the level of hesitation and disagreement in all 5 variables of the criteria to improve the effectiveness of the control work. physical education examination and evaluation. This is evident in the χ^2 indicator always $> \chi^2$ tables (the difference is statistically significant with $P < 0.001$). Meanwhile, lectures' opinions are similar to students ($P < 0.001$).

The comparison of the corresponding observed variables between the two students and lectures found that all 5 variables of the solution have similarities in the evaluation opinions. This is evident in the χ^2 indicator always $< \chi^2$ tables (insignificant difference, not statistically significant with $\text{Sig} = .145 - .619 > .05$).

Comparing \bar{x} observed variables on satisfaction level of lectures and students on solutions to improve physical education assessment by t student indicator number 7 proved that: There is a difference \bar{x} means meaning Statistics between students' and lectures' opinions in SOL2_Improve the professional qualifications and attitudes of lectures when examining and evaluating (Sig = .000 <.05) and SOL5_Change content, curriculum according to students' interests to improve the interests of students (Sig = .000 <.05). However, with the remaining 3 solutions, there is no significant difference between the opinions of students and lectures (Sig = .121 - .246 > .05). In general, both students and lectures highly appreciate all 5 observed variables, $\bar{x} = .86 \sim 1.00$ (in the scale close to the Agreed level).

Thus, through analysis and comparison, both lectures and students have a high consensus on 5 options to choose solutions to improve the physical education examination and evaluation, in detail:

- Increasing investment in facilities, yards, equipment for teaching and learning activities.
- Improve the professional qualifications and attitudes of lectures when examining and evaluating.
- Update documents and teaching materials.
- Innovation teaching method to make students become more positive.
- Change content, curriculum according to students' interests to improve the interests of students.

4. Conclusion

The research has an overview of the status of physical education at the HCMC University of Technology and Education; Designing measuring tools for physical education examination and evaluation for students of HCMC University of Technology and Education; with a Likert scale - 5 levels; Measuring reliability of observed variables with Cronbach's Alpha coefficient; and finally using Hypothesis test of the average values of two independent models (independent samples t-test), finally synthesized 15 factors with 76 survey variables with high consensus of lectures and students.

The study has identified the causes affecting the inspection and evaluation due to:

- Training field and equipment for subjects.
- Content, tests used to evaluate.
- Measures, machines and measuring tools.
- Qualifications, attitudes and methods of lectures.
- Weather conditions.

Finally proposed 5 solutions to improve the effectiveness of physical education examination and evaluation of students at the HCMC University of Technology and Education, which are:

- Increasing investment in facilities, yards, equipment for teaching and learning activities.
- Improve the professional qualifications and attitudes of lectures when examining and evaluating.
- Update documents and teaching materials.
- Innovation teaching method to make students become more positive.
- Change content, curriculum according to students' interests to improve the interests of students.

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