

EFFICIENCY OF PHYSICAL EXAMINATION AND ASSESSMENT INNOVATION AT HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY AND EDUCATION

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Abstract:

Based on the research on the real situation of physical examination and assessment of students at Ho Chi Minh City University of Technology and Education, we have proposed a number of feasible solutions, which have proved effectiveness when applied in teaching practice.

Keywords: Assessment, physical education, examination, students, Technology and Education

INTRODUCTION

Resolution, 29 adopted by the eighth Plenum of the 11th Central Committee on 4 November 2013, clearly stated, "Fundamentally renovating the form and method of examination and assessment of education and training results, ensuring honesty and objectivity". In addition, the "Education Development Strategy 2011 - 2020" also identified that one of the shortcomings and weaknesses of Vietnam's education in the recent period was "Content of the program, methods of teaching and learning, and examination, assessments are slowly innovated". From the above reasons, the issue of "Efficiency of physical examination and assessment innovation at Ho Chi Minh City University of Technology and Education" will be the basis for annually evaluating the physical fitness by students. The issue is also premise to adjust and improve the method of examination and assessments for the benefit of students, contributing to improving the effectiveness of school physical education.

RESEARCH METHODS

The methods used in the research process include method of document analysis and synthesis; method of observation; method of sociological investigation; method of statistical mathematics.

Evaluation tools include:

- *5-point Likert scale*: Strongly agree (5 points); Agree (4 points); Neutral (3 points); Disagree (2 points); Strongly Disagree (1 point). In which, distance value = (maximum - minimum)/n = (5 - 1)/5 = 0.8.

- *Measuring the reliability of observed variables by Cronbach's Alpha coefficient*: Cronbach's Alpha is the reliability coefficient used to test the correlation measurement scale between pairs of observed variables. This method aims to eliminate unreliable observed variables (with coefficients of variable correlation and variable- total correlation less than 0.3). In theory, the higher the coefficient is, the better it is (the scale is more reliable). However, this is not entirely true. Too high Cronbach's Alpha coefficient (about 0.95 and above) shows many variables in the scale with no difference. This phenomenon called redundancy in the scale.

- *Index χ^2* : Used to evaluate the qualitative characteristics (identification, rank, nature, category, etc.) on frequencies that do not require distributions according to the standard probability law. In this study, we used this verification to compare the choice of observed variables between students and teachers. The most common form of verification statistics are:

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

In which: O is the observation frequency (measurement data); E is the theoretical frequency (exact prediction value)

- *Verifying the hypotheses about means of two independent samples (independent samples t-test)*

After conducting a survey of observed variables tested by Cronbach's Alpha coefficient, we in turn analyzed and assessed the similarity of the two objects student and teacher by verifying the hypothesis on the mean of 2 independent samples (Independent Samples T-Test).

- If Sig. ≥ 0.05 , the variance of 2 objects is not different, use the t test result in Equal variances assumed.

- If Sig. of the test $t \leq \alpha$ (significance level), there is a significant difference about the mean of 2 objects and vice versa.

RESULTS AND DISCUSSION

1. Situation of physical evaluation and assessment at Ho Chi Minh City University of Technology and Education

Looking at the real situation of Ho Chi Minh City University of Technology and Education, designing measurement tools for the examination and evaluation of physical education for students of Ho Chi Minh City University of Technology and Education with a 5-point Likert scale, measuring the reliability of observed variables by Cronbach's Alpha coefficient and finally, using the hypothesis about the means of the two independent samples (independent samples T-test), we have collected 15 factors with 76 survey variables. Both teachers and students have high consensus on 15 factors in the following specific survey variables:

- In terms of understanding of examination and evaluation, these are the variables: Classification of student's level; Assessment of student's status, motor capacity, health; Identification of professional achievements and

encouragement for student's improvement in learning and training; Creation of competition in students.

- In terms of the requirements of examination and evaluation, these are the variables: Representation of physical education knowledge; Strengthening of motor skills and techniques; Development of cognitive capacity and creative thinking; Creation of a change of attitude, behavior by students for the subject; Train for students to detect and solve problems.

- In terms of examination and evaluation principles, these are the variables: Objectivity, accuracy and fairness; Comprehensive quantity, quality, knowledge of subject; Publicity, the results of examination and evaluation promptly announced; Development, maintain the striving and progress of students.

- In terms of examination and evaluation methods, these are the variables: Method of practice test.

- In terms of examination and evaluation forms, these are the variables: Periodic and final assessment. Other forms are rarely used.

- In terms of examination and evaluation content, these are the variables: General knowledge about the subject; Technique; Physical fitness. Particularly, the 2 contents of Tactics and Psychology are less used.

- In terms of examination and evaluation tools, these are the variables: Tests of Physical Education.

- In terms of compilation, making exam/test questions, these are the variables: Closely follow professional knowledge; Associate with the skills trained and taught; Pay attention to the learning attitude; Test and evaluate for the student's progress.

- In terms of examination and evaluation result feedback, the evaluation is the variable: Feedback takes place immediately after the examination and evaluation of Physical Education subject.

- In terms of teaching and learning adjustment, there are the variables: Adjust the content of the subject and teaching method as well as adjusting the content and form of testing.

- In terms of the record storage of test and

evaluation results, these are the variables: mainly through books.

- In terms of the application of tests according to Decision No. 53/2008/QĐ-BGDĐT, there are the variables: the consensus on the application of 6 tests to physical examination and assessment by students according to this Decision.

- In terms of satisfaction level, it is all variables: Ensuring objectivity, comprehensiveness, system, publicity and development; Professional qualifications of teachers; Conditions of equipment and facilities for examination and evaluation; Serious, friendly and correct attitude of teachers; Student's achievement of many physical and mental benefits after attending the subject.

2. Causes affecting examination and evaluation of Physical Education

The survey of the causes affecting the examination and evaluation of Physical Education is conducted through 6 factors, corresponding to 5 statements in the questionnaire. The interview results in Table 1 show that comparing the observed variables in the same object of students found the level of (strongly) agreed to prevail over the level of

neutral and disagree in all 5 variables. This is clearly expressed in the index $\chi^2_{\text{evenness}} > \chi^2_{\text{table}}$ (the difference is statistically significant with $P < 0.001$). Meanwhile, except for variable NN4, opinion of the remaining variables by both teacher and students are similar ($P < 0.01 - 0.001$).

Matching and assessing the corresponding observed variables between the two subjects, students and teachers found that all 5 variables of the cause impacting the examination and evaluation of Physical Education have the similarity about the opinion. This is clearly shown by the index $\chi^2_{\text{calculation}} < \chi^2_{\text{tables}}$ (the difference is not significant, not statistically significant with $\text{Sig} = .101 - .815 > .05$).

Thus, through analysis and matching, both teachers and students have a high consensus when identifying the causes that affect the examination and evaluation of Physical Education. They include training ground, equipment for the subject (highest); Next is the content and test for evaluation; Means and machines and tools for measurement and evaluation; Qualifications, attitudes and methods of implementation by teachers and Weather conditions.

Table 1. Current situation of causes affecting Physical Education examination and evaluation

Criteria	Subject	(Strongly) agree		Neutral and Disagree		Comparison of same subjects		Comparison between teachers and students	
		m _i	%	m _i	%	χ^2	P	(Value)	(Sig)
1. Training ground, equipment for the subject	Student	237	79.00	63	21.00	200.4	<0.001	0.1563	0.815
	Teacher	15	79.00	4	21.10	12.68	<0.001		
2. The content and test for evaluation	Student	226	75.30	74	24.70	188.5	<0.001	5.190	0.268
	Teacher	11	57.90	8	42.10	9.73	<0.01		
3. Means and machines and tools for measurement and evaluation	Student	211	70.30	89	29.70	174.8	<0.001	7.748	0.101
	Teacher	9	47.40	10	52.60	9.52	<0.01		
4. Qualifications, attitudes and methods of implementation by teachers	Student	217	72.30	83	27.70	179.9	<0.001	5.319	0.256
	Teacher	11	57.90	8	42.10	9.73	<0.01		
5. Weather conditions	Student	214	71.30	86	28.70	177.3	<0.001	4.871	0.301
	Teacher	11	57.90	8	42.10	9.73	<0.01		

3. Several solutions to improve efficiency of Physical Education examination and evaluation at Ho Chi Minh City University of Technology and Education

After understanding the causes that affect the examination and evaluation of Physical Education, we continue to perform the final step

is to survey the opinions of students and teachers to find out the solutions to improve the efficiency of examination and evaluation of Physical Education. This factor is conducted through 5 elements, corresponding to 2 statements in the questionnaire (Agree: 1 point; Disagree: 0 point).

Table 2. Situation of choosing solutions to improve the evaluation and evaluation of Physical Education

Criteria	Subject	Agree		Disagree		Comparison of same subjects		Comparison between teachers and students	
		m _i	%	m _i	%	χ ²	P	(Value)	(Sig)
Solution 1. Increasing investment in facilities, ground, equipment for teaching - learning	Student	280	93.30	20	6.70	262.6	<0.001	1.351	0.619
	Teacher	19	100.00	0	0.00	19	<0.001		
Solution 2. Improving professional qualifications and attitude of teachers while testing and evaluating	Student	261	87.00	39	13.00	232.1	<0.001	2.814	0.145
	Teacher	19	100.00	0	0.00	19	<0.001		
Solution 3. Updating materials, curriculum	Student	241	80.30	59	19.70	205.2	<0.001	0.965	0.546
	Teacher	17	89.50	2	10.50	15.42	<0.001		
Solution 4. Innovating teaching methods towards making student more active	Student	257	85.70	43	14.30	226.3	<0.001	1.236	0.49
	Teacher	18	94.70	1	5.30	15.42	<0.001		
Solution 5. Change the content and curriculum according to the student's interests to enhance their passion	Student	271	90.30	29	9.70	247.6	<0.001	2.020	0.236
	Teacher	19	100.00	0	0.00	19	<0.001		

The interview results presented in Table 2 show that the rate of choosing solutions is as follows: Solution 1 accounts for 93.3%; Solution 2 accounts for 87%; Solution 3 accounts for 80.3%; Solution 4 accounts for 85.7%; Solution 5 accounts for 90.3%.

Comparing the observed variables in the same subject of students found that the level of (strongly) agreed to prevail over the level of neutral and disagree in all 5 variables of the criteria to improve the effectiveness of the examination and evaluation of Physical Education. This is clearly shown in the index $\chi^2_{\text{evenness}} > \chi^2_{\text{table}}$ (the difference is statistically significant with $P < 0.001$). In parallel, the

opinion of teacher is similar to the opinion of students ($P < 0.001$).

Matching and assessing the corresponding observed variables between 2 subjects of students and teachers found that all 5 variables belonging to the solutions have the similarity about the opinion. This is clearly shown in the index $\chi^2_{\text{evenness}} < \chi^2_{\text{table}}$ (the difference is not significant, not statistically significant with $\text{Sig} = .145 - .619 > .05$).

Comparing observed variables \bar{x} on Satisfaction level by Teacher and Student about solutions to improve the examination and evaluation of Physical Education through t-student index, found: There is a statistically

significant difference \bar{x} between the opinions of students and teachers in Solution 2 and Solution 5 (Sig = .000 <.05). However, with the 3 remaining solutions, there is no statistically significant difference between the opinions by students and teachers (Sig = .121 - .246 > .05). In general, both students and teachers highly appreciate all 5 observed variables, $\bar{x} = .86 \sim 1.00$ (within the scale close to Agree level).

Thus, through analysis and matching, both teachers and students have a high consensus about 5 variables of choosing solutions to improve the examination and evaluation of Physical Education.

4. Efficiency of renovating physical examination and assessment at Ho Chi Minh City University of Technology and Education

- Application period: Two semesters of academic year 2017-2018

- Application object: Physical Education teachers and 300 students (first-year and second-year) studying Physical Education at Ho Chi Minh City University of Technology and Education

- Application content: 5 selected solutions

- Comply with the principles when applying the solution: Principle of ensuring practicality; Principle of ensuring feasibility; Principle of ensuring uniformity; Principle of ensuring scientific; Principle of ensuring effectiveness.

Through the period of applying the selected solutions into the practice of teaching Physical Education at Ho Chi Minh City University of Technology and Education, the results presented in Table 3, recognizing that the rate of student's satisfaction for the examination and evaluation of Physical Education are as follows: Variable HL1 (84.3%); HL2 (83.3%); HL3 (71.3%); HL4 (82%); HL5 (74%).

Comparing observed variables in the same subject of students found that the level of (strongly) agreed to prevail over the level of neutral and disagree in all 5 variables of the criteria Satisfaction level of Physical Education examination and evaluation. This is clearly shown in the index $\chi^2_{\text{evenness}} > \chi^2_{\text{table}}$ (the difference is statistically significant with P

<0.001). In parallel, the opinion of teacher is similar to the opinion of students (P <0.01 - 0.001).

Matching and assessing the corresponding observed variables between students and teachers found that, except for the HL2 variable, all of the 4 remaining variables in the Satisfaction level of Physical Education examination and evaluation are similar in terms of opinion. This is clearly shown in the index $\chi^2_{\text{evenness}} < \chi^2_{\text{table}}$ (the difference is not significant, not statistically significant with Sig = .081 - .663 > .05).

Comparison of observed variables \bar{x} on Satisfaction level by Teacher and Student of Physical Education examination and evaluation through t-student index in Table 4 found that, there is no statistically significant difference between the opinions of students and teachers (Sig = .081 - .893 > .05). Overall, both students and teachers highly appreciate all 5 observed variables, $\bar{x} = 3.84 \sim 4.25$ (within the scale from Agree to Strongly Agree).

Thus, through analysis and matching, after period if applying the innovative solutions, both teachers and students have a high consensus on the level of satisfaction with the examination and evaluation of Physical Education.

CONCLUSION

The research has generalized about the reality of Physical Education at Ho Chi Minh City University of Technology and Education as well as identified the causes affecting the examination and evaluation, including the training ground, equipment for the subject; Contents, tests for evaluation; Means, machines and tools for measurement and evaluation; Qualifications, attitudes and implementation methods of teachers; Weather conditions. Thereby, we have proposed 5 solutions to improve the effectiveness of the physical examination and assessment for students at Ho Chi Minh City University of Technology and Education. They include increasing investment in facilities, ground, equipment for teaching - learning, improving professional qualifications and attitude of teachers while testing and evaluating, updating materials, curriculum,

Table 3. Level of satisfaction by teachers and students on Physical Education examination and assessment

Criteria	Subject	(Strongly agree)		Neutral and Disagree		Comparison of same subjects		Comparison between teachers and students	
		m _i	%	m _i	%	χ ²	P	Value	Sig
1. Ensuring objectivity, comprehensiveness, system, publicity and development	Student	253	84.30	47	6.70	220.7	<0.001	2.398	0.663
	Teacher	14	73.70	5	0	11.63	<0.001		
2. Professional qualifications of teachers	Student	250	83.30	50	13.00	216.6	<0.001	9.655	0.047
	Teacher	13	68.40	6	0	10.78	<0.01		
3. Conditions of equipment and facilities for examination and evaluation	Student	214	71.30	86	19.70	177.3	<0.001	6.312	0.177
	Teacher	10	52.60	9	10.50	9.52	<0.01		
4. Serious, friendly and correct attitude of teachers	Student	246	82.00	54	14.30	211.4	<0.001	8.311	0.081
	Teacher	14	73.70	5	5.30	11.63	<0.001		
5. Student's achievement of many physical and mental benefits after attending the subject	Student	222	74.00	78	9.70	184.5	<0.001	4.719	0.317
	Teacher	14	73.70	5	0	11.63	<0.001		

Table 4. Comparison of satisfaction level with physical examination and assessment for student

Criteria	Subject	m _i	Levene's Test for Equality of Variances		(Mean)	+ SD (Std. Deviation)	ε (Std Error Mean)	t	Sig. (2-tailed)
			F	Sig.					
1. Ensuring objectivity, comprehensiveness, system, publicity and development	Student	300	0.046	0.831	4.25	0.767	0.044	0.777	0.438
	Teacher	19			4.11	0.809	0.186		
2. Professional qualifications of teachers	Student	300	5.231	0.023	4.17	0.749	0.043	1.247	0.228
	Teacher	19			3.84	1.119	0.257		
3. Conditions of equipment and facilities for examination and evaluation	Student	300	1.510	0.22	3.94	0.978	0.056	1.753	0.081
	Teacher	19			3.53	1,172	0.269		
4. Serious, friendly and correct attitude of teachers	Student	300	1.222	0.27	4.09	0.753	0.043	1.098	0.273
	Teacher	19			3.89	0.937	0.215		
5. Student's achievement of many physical and mental benefits after attending the subject	Student	300	0.044	0.834	3.97	0.941	0.054	-0.135	0.893
	Teacher	19			4	0.882	0.202		



For 60 years of development and growth, Bac Ninh Sports University has successfully completed the task of providing high-quality human resources for Physical Training and Sport sector (photo by: upes1)

innovating teaching methods towards making student more active, change the content and curriculum according to the student's interests to enhance their passion.

After the application of the solutions, there have been significant changes in the quality of physical examination and evaluation, ensuring objectivity, comprehensiveness, system, publicity, development (highest). Professional qualifications of teachers are enhanced. The conditions of equipment and facilities for examination and evaluation have been improved. The attitude of teachers when conducting tests and assessments has changed more seriously, friendly and properly. After attending the course, students have achieved many physical and mental benefits.

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