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Selection and building of satisfaction rating criteria for the assessment of students on the training program for the physical education industry of pedagogy: Thai Nguyen University

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Abstract

Student satisfaction is determined as one of the basic criteria to evaluate the appropriateness of the training program for the training object. Through the use of regular and reliable scientific research methods in Physical Education and Sports, the research results have identified the criteria for assessing student satisfaction with the training program in Sports Education. Thai Nguyen University's University of Education quality includes 39 variables for six related components and six variables for measuring the satisfaction scale. In, the infrastructure component is measured by 6 observed variables; Components Six observed variables measure staff and lecturer enthusiasm, while eight observed variables measure teaching staff composition. Compatibility has 3 variables; The University's interest in students has 7 observed variables. The level of student satisfaction with the subject according to ISO standards has 9 observed variables. Six variables were observed on the satisfaction scale. The results of Cronbach Alpha coefficient analysis and EFA exploratory factor analysis, the six proposed components are satisfactory and statistically significant.

Keywords: Evaluation criteria, satisfaction, Physical Education, training program, College of Education - Thai Nguyen University

Introduction

The level of satisfaction of the training subjects is determined to be one of the important and meaningful criteria reflecting the appropriateness and compatibility of that program for the direct beneficiaries ^[1]. Clearly defining the level of satisfaction of beneficiaries allows policymakers and trainers to adjust program components, thereby perfecting the training program in the direction of adapting to the actual needs of actual beneficiaries. In addition, the adjustment of the program towards the level of satisfaction allows the training program to be adjusted according to the plasticity of the labor market and actual society ^[2, 3, 4], there by developing a training model suitable to the goals and tastes of society in order to increase enrollment and strengthen the position of the training sector in the social education sector.

This study was carried out on the basis of using regular and reliable scientific research methods in sports and exercise; its main purpose was determined to be the initial step in selecting and building a set of criteria for evaluating the training program created by the Department of Physical Education, College of Education - Thai Nguyen University. The findings have been determined to be extremely important in adjusting the current program toward completion as well as the training sector in terms of outputs that are in line with the beneficiaries and the actual needs of society. The results obtained initially show that the beneficiaries were surveyed and research data were collected to ensure the scientific city and reliability of the research. The satisfaction level of students in the Physical Education Department of Pedagogical University-Thai Nguyen University is relatively good overall with respect to the current training program, however, there are still some comparisons and limitations when it comes to physical education. Evaluated by ISO criteria (Vietnamese standard ISO 21001:2019 on Educational Organizations) for the overall training program.

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Research Methodology

The research uses the following methods: synthesis and analysis of documents, interviews by questionnaire, a sociological survey; and Statistical Mathematics. Inside: The study was conducted to develop criteria to assess the satisfaction of students with the training program of the Physical Education major at the University of Education - Thai Nguyen University, through the SERVQUAL scale. Parasuraman and CTG (1998) [4] developed the SERVQUAL scale, which has been used to assess satisfaction in a variety of fields and research works. The SERVQUAL scale consists of five specific components:

1. Reliability level;
2. The degree of response;
3. Level of assurance
4. Empathy level
5. Tangible means.

The SERVQUAL scale addresses all issues related to the active substance that affects the beneficiaries. However, each specific field has its own peculiarities, so adjustment and supplementation are indispensable in this study. The following components are proposed by the research to evaluate the training program for students of the Physical Education Department of Pedagogical University, Thai Nguyen University:

- Facilities: including the tangible and external values of facilities, equipment, lecture halls, libraries, etc.
- Ability to full fill commitments, and meet output standards: Conformity and accuracy of commitments and promises in terms of conditions, environment, and policies in learning and training programs;
- Staff and lecturer enthusiasm: the level of readiness to meet and serve students in the direction of ensuring the main training tasks
- Student team: students' knowledge, expertise, and style, ability to make students believe.
- The training unit's interest in students: Show kindness and concern for students during the training process
- Level of student satisfaction about the subject of ISO: Expressing the level of satisfaction of students after finishing the course, assessed according to ISO regulations of the training unit.
- Satisfaction scale: measured by the level of student satisfaction with the training program of the Physical Education Department of Pedagogical University - Thai Nguyen University through the 6 components identified above. After being adjusted and supplemented to suit the nature of the research survey, the scale of components affecting student satisfaction with the training program includes 49 observed variables measuring 6 components and 6 observed variables measuring the satisfaction scale.

Inside:

Components of facilities are measured by seven observed variables;

Components Enthusiasm of staff and lecturers are measured by 8 observed variables;

The composition of the teaching staff has nine observed variables;

Commit ability has three variables;

The training unit's interest in students has seven observed variables;

The level of student satisfaction with ISO's subjects has nine observed variables.

The scale of student satisfaction with the training program of the Physical Education Department of Thai Nguyen University of Pedagogy is measured by six observed variables.

The research object is to interview 30 lecturers, experts, and managers and survey 300 students and alumni of the Department of Physical Education at Thai Nguyen University of Education.

The research was carried out according to the curriculum renewal plan to serve the needs of reforming the overall training program of the University of Pedagogy - Thai Nguyen University in 2021-2022.

3. Research Findings and Discussions

Based on the identified criteria, the research was conducted to build an interview form that would serve as a basis for selecting criteria to assess the satisfaction of students with the training program at the Department of Physical Education, Pedagogical University- Thai Nguyen University. In order to ensure objectivity, the study conducted 2 interviews, 1 month apart each time, to ensure the reliability of the interviewed subjects. Pre-printed questionnaires were given to 30 experts, lecturers, and researchers. The manager has been working at the University of Pedagogy - Thai Nguyen University.

The purpose of these questions is to find out and select the criteria to assess the satisfaction of students with the training program of the Physical Education Department of Pedagogical University - Thai Nguyen University. Respondents choose one of three options with three specific points: Frequently used-3 points, rarely used-2 points, and not used-0 points.

Through the results of the interview, the research will continue to calculate the percentage (%) and total score to select the criteria to evaluate the satisfaction of students with the training program of the University of Physical Education. Pedagogy - Thai Nguyen University is as follows: After 2 interviews, if the average result of the total score is 90% or more, the topic will be chosen based on that criterion.

The results of the interviews are presented in Table 1.

Table 1: Results of the interview to select the criteria to assess the satisfaction of students about the training program of the Department of Physical Education at Thai Nguyen University of Education (n1=n2=30)

Scale	Results of the 1st interview								Results of the 2nd interview								\bar{x} of two interviews (%)
	Regularly available		Few use		Not use		$\Sigma_{\text{points}}/\%$	Regularly available		Few use		Not use		$\Sigma_{\text{points}}/\%$			
	n	Point	n	Point	n	Point		n	Point	n	Point	n	Point				
Facilities	1	Scenery, spacious campus, creating a beautiful impression	26	78	3	6	1	0	84/93,3	26	78	4	8	0	0	86/95,6	94,4
	2	Classrooms, practice grounds, full training equipment, good quality or higher	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	3	Adequate and modern teaching-learning equipment	25	75	5	10	0	0	85/99,4	24	72	6	12	0	0	84/93,3	93,9

	4	The library provides rich, fully up-to-date materials, easy to borrow	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	5	Accessible open resources	26	78	2	4	2	0	82/91,1	25	75	4	8	1	0	83/92,2	91,7
	6	Yards, cafeterias, dormitories, toilets are satisfactory	26	78	2	4	2	0	82/91,1	25	75	3	6	2	0	81/90,0	90,6
	7	Wifi system with wide coverage, good connection	17	51	3	6	10	0	57/63,3	18	54	2	4	10	0	58/64,4	63,8
Enthusiasm of staff-lecturers	1	Department staff handle work promptly and on time	10	30	18	36	2	0	66/73,3	9	27	18	36	3	0	63/70,0	71,6
	2	Departmental staff satisfactorily address the reasonable requirements of students	27	81	3	6	0	0	87/96,7	26	78	4	8	0	0	86/95,6	96,1
	3	Staff and staff are always warm and polite to students	25	75	5	10	0	0	85/94,4	26	78	4	8	0	0	86/95,6	96,1
	4	Teachers are always happy to help students in their studies	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	5	Department staff are always happy to help students	23	69	6	12	1	0	81/90,0	24	72	5	10	1	0	82/91,1	90,6
	6	Department staff are polite when communicating with students	25	75	4	8	1	0	83/92,2	25	75	5	10	0	0	85/94,4	93,3
	7	Lecturers are interested in learning and absorbing students' lessons	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	8	Department staff have a considerate attitude, helping students	11	33	10	20	9	0	53/58,9	12	36	8	16	10	0	52/57,8	58,3
Teaching staff	1	Lecturers with solid professional knowledge	26	78	2	4	2	0	82/91,1	25	75	3	6	2	0	81/90,0	90,6
	2	Lecturers have good teaching methods and skills	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	3	Lecturers have practical experience, often integrated into lectures	17	51	13	26	0	0	77/85,5	18	54	5	10	7	0	64/71,1	78,3
	4	Teachers know how to encourage students to study actively	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	5	Enthusiastic and dedicated lecturers	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6
	6	Lecturers are friendly, polite to students	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6
	7	Lecturers ensure class time, teaching plan	25	75	5	10	0	0	85/94,4	24	72	6	12	0	0	84/93,3	93,9
	8	Fair and accurate teacher evaluation methods	26	78	3	6	1	0	84/93,3	26	78	4	8	0	0	86/95,6	94,4
	9	Lecturers understand the capacity and desires of students	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
Ability to fulfill commitments	1	The school lives up to all its commitments	25	75	5	10	0	0	85/94,4	24	72	6	12	0	0	84/93,3	93,9
	2	Output quality meets the promised standards	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	3	Study progress and graduation in accordance with the original commitment	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
The attention of the training unit to students	1	Relevant information is provided to students in a timely and accurate manner	25	75	4	8	1	0	83/92,2	26	78	4	8	0	0	86/95,6	93,9
	2	The quantity and quality of seminars meet the learning needs of students	26	78	3	6	1	0	84/93,3	26	78	4	8	0	0	86/95,6	94,4
	3	The training unit organizes conversations with students to listen to their aspirations, answer students' question during the annual learning process.	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	4	The training unit is interested in the living and learning conditions of students	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	5	The training unit arranges a convenient study time for students	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6

	6	The form of reward and scholarship encourages the spirit of students	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	7	The training unit creates many opportunities for students to promote their needs to learn and develop skills	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6
Students' satisfaction with iso subjects	1	The objectives and syllabus of the subject are clearly introduced by the lecturer from the first periods of the subjects	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	2	The lecturer clearly presents the requirements for the content and method of studying the subject and how to evaluate the subject (exam, test)	25	75	5	10	0	0	85/94,4	24	72	6	12	0	0	84/93,3	93,9
	3	Lecturers go to class and finish the subject in accordance with the school's regulations	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	4	The subject has a full syllabus and references. Easy-to-understand training instructions and full lab tools	25	75	4	8	0	0	83/92,2	26	78	4	8	0	0	86/95,6	93,9
	5	Engaging, lively lectures, streamlined content and structure	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	6	The instructor introduces clear and easy-to-understand techniques/practical skills/exercises	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6
	7	The subject has a good connection between theory and practice, practical situational exercises help students understand the lesson well	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	8	Lecturers are always enthusiastic, teaching when learners do not understand the lesson in class	26	78	4	8	0	0	86/95,6	26	78	4	8	0	0	86/95,6	95,6
	9	Lecturers treat students fairly and frankly	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
Satisfaction scale	1	You are satisfied with the quality of the training unit's facilities	25	75	5	10	0	0	85/94,4	24	72	6	12	0	0	84/93,3	93,9
	2	You are satisfied with the enthusiasm of the staff and lecturers of the training unit.	26	78	3	6	1	0	84/93,3	26	78	4	8	0	0	86/95,6	94,4
	3	You are satisfied with the quality of the teaching staff of the training unit	21	63	9	18	0	0	81/90,0	22	66	8	16	0	0	82/91,1	90,6
	4	You are satisfied with the quality of the training unit's ability to fulfill its commitments	25	75	5	10	0	0	85/94,4	24	72	6	12	0	0	84/93,3	93,9
	5	You are satisfied with the quality of the training unit's attention to students	27	81	3	6	0	0	87/96,7	28	84	2	4	0	0	88/97,8	97,2
	6	Student satisfaction with iso subjects	23	69	7	14	0	0	83/92,2	24	72	5	10	1	0	82/91,1	91,7

Table 1 shows that: lecturers, experts, managers, and scientists have a high level of consensus on the answers. According to the methodology presented above, the criteria in the interview account for 90% of the total score at a very significant level, which is continuing to be included in the research. According to the convention presented above, the study met 45 criteria.

To test the coincidence of the results of the two interviews, the study conducted a comparison using the squared index (χ^2), showing that in all the results observed through the two interviews, the indicators are the same. there are

χ^2 calculated $< \chi^2$ tables (χ^2 tables = 5.91) at the probability threshold $P > 0.05$, so the difference in the two observed values is not significant at $p > 0.05$. Therefore, the results of the two interviews of lecturers, experts, managers, and scientists have a high degree of consensus on the answers.

Thus, the research has identified the criteria for assessing the satisfaction of students with the training program for Physical Education majors at the University of Education - Thai Nguyen University, including: 39 observed variables measuring six components and six observed variables measuring the Satisfaction scale. Inside:

Infrastructure composition is measured by six variables (symbols C11→C16);

The enthusiasm component of staff and lecturers is measured by six variables (symbol C21→C26);

The composition of the teaching staff is measured by 8 variables (symbol C31→C38);

Composition ability to make commitments is measured by 3 variables (symbol C41→C43);

The component of the training unit's interest in students is measured by seven variables (symbol C51→C57);

The component of student satisfaction with the major ISO standard is measured by 9 variables (symbols from C61→C69);

The component satisfaction scale is measured by six variables (symbol SET_1→SET_6).

The research sample was selected according to the random method of surveying students of the regular university system who have been majoring in Physical Education at the University of Education - Thai Nguyen University. The sample size is 127 students. The study issued 127 questionnaires, and after entering data and screening the questionnaires, the results showed that there were 119 valid votes for the purpose of the survey. The ballots were rejected because the survey respondents did not provide sufficient information, or the information was rejected because the respondents typed the same choice, etc.

The scales are evaluated through the main tool which is the Cronbach Alpha coefficient. To eliminate the garbage variables, the Cronbach Alpha coefficient is used. Variables with a total correlation coefficient < 0.3 [3, 5] will be excluded. The scale is chosen based on its Cronbach Alpha reliability > 0.6 [3, 5]. The selected interview information processing process is SPSS 20.0.

The results obtained on the Cronbach Alpha reliability coefficient are as follows

+ Scale of components of facilities: The reported value of the component's reliability coefficient = 0.982. The correlation coefficients of the total variables of the component measures are all > 0.3 . The smallest reported value = 0.915 (variable C16) and the highest reported value = 0.958 (variable C12).

+ Scale of components of enthusiasm of staff and lecturers: The correlation coefficients of the total variables of the component measures are all > 0.3 . The minimum reported value is 0.930 (variable C23) and the highest reported value is 0.960 (variable C26). Component Enthusiasm of staff and lecturers = 0.983.

+ The scale of the teaching staff composition: The correlation coefficients of the total variables of the measuring components are all > 0.3 . The smallest reported value = 0.938 (variable C38) and the highest reported value = 0.958 (variable C33). The composition of the teaching staff has a Cronbach Alpha = 0.988.

+ Scale of components of ability to make commitments: The correlation coefficients of the sum of the component measures are all > 0.3 . The smallest reported value = 0.895 (variable C43) and the highest reported value = 0.957 (variable C42). The Commitability component has a Cronbach Alpha = 0.969.

+ The scale of the components of the training unit's interest in students: The correlation coefficients of the total variables of the component measures are all > 0.3 . The smallest reported value = 0.924 (variable C53) and the highest reported value = 0.960 (variable C56). Component The training unit's interest in students has Cronbach Alpha = 0.987.

+ Scale of components of student satisfaction about the subject according to ISO: The correlation coefficients of the sum of the components measuring variables are all > 0.3 . The smallest reported value = 0.919 (variable A13) and the highest reported value = 0.952 (variable A19). The component of ISO's student satisfaction with the subject has a Cronbach Alpha = 0.985.

+ Scale of satisfaction components: The scale of student satisfaction with the training program is measured by six variables, and the analysis of the Cronbach Alpha coefficient, shows that the Cronbach Alpha coefficient reaches a value of =0.86. The values of the correlation coefficients for the total variables of the measuring components are all > 0.3 . The smallest reported value = 0.933 (SET_2 variable) and the largest reported value = 0.973 (SET_4 variable).

The Cronbach Alpha analysis results show that the six components of the training program scale have a reliability > 0.6 . Thus, the scale designed for the topic is statistically significant and achieves the necessary reliability coefficient. Specifically:

1. Components of facilities have Cronbach Alpha = 0.982;
2. The enthusiastic component of staff and lecturers has Cronbach Alpha = 0.983;
3. The composition of the teaching staff has Cronbach Alpha = 0.988;
4. The committed ability component has a Cronbach Alpha = 0.969;
5. The interest component of the training unit has a Cronbach Alpha = 0.987;
6. According to ISO, the component of student satisfaction about the subject has a Cronbach Alpha = 0.985.
7. Satisfaction scale has Cronbach Alpha = 0.986.

Six components of the evaluation of training programs are still being studied and are included in the EFA exploratory factor analysis to test the scale of the research to ensure its scientific value. The KMO (Kaiser–Meyer–Olkin Measure of Sampling Adequacy) index was used to analyze the relevancy of the factors. KMO value > 0.5 , the new factors are used.

- EFA exploratory factor analysis with 6 quality components: With hypothesis, H0 posed in this analysis, there is no correlation between the 39 observed variables in the population. KMO and Bartlett's test in factor analysis shows that hypothesis H0 is rejected (sig.=0.000). The reported KMO coefficient has a value of 0.972 > 0.5 . Variables have reported values greater than 0.4, so observed variables are important in 6 quality components. Total Variance Explained has a reported value of = 90.735%, this variance is defined as 6 components that can explain 90.735% of the variability of the data.

From here, the study draws the conclusion that the scale is acceptable and that the observed variables are correlated with each other in terms of the overall scope of the survey sample.

- Factor analysis exploratory EFA with component Satisfaction: For the scale of satisfaction with the training program, after analyzing EFA, there is 1 factor at Eigenvalues=5.611. KMO and Bartlett's test have reported a value of 0.895 and a significance level of Sig.=0,000 (< 0.05). The variables have the reported value > 0.4 , so the observed variables are important in the component of student satisfaction with the training program (=93.519%).

Thus, through the results of Cronbach Alpha coefficient analysis and EFA exploratory factor analysis, the six proposed components are satisfactory and statistically significant.

Conclusion

Through steps such as determining the satisfaction scale, through two interviews, etc., objectively, and scientifically, the research has determined the criteria for assessing the level of student satisfaction with the program. Training in the Physical Education Department of Pedagogical University - Thai Nguyen University includes 39 observed variables measuring 6 components and 6 observed variables measuring satisfaction scale. The composition of facilities is measured by six observed variables; the enthusiasm component of staff and lecturers is measured by six observed variables; and the composition of the teaching staff is measured by eight observed variables. The ability to make commitments is measured by 3 variables; and the training unit's interest in students is measured by 7 observed variables. According to ISO, the level of student satisfaction with the subject is measured by 9 observed variables. The satisfaction scale is measured by six observed variables.

The results of Cronbach's alpha coefficient analysis and the EFA discovery factor show that the six proposed components are satisfactory and statistically significant. The above components should be used to assess the satisfaction of students with the training program of the Physical Education Department of Pedagogical University, Thai Nguyen University.

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