Quality Assurance Analysis in Learning Process Standards: Empirical Study in the Higher Education Sector

Review of Integrative Business & Economics Research

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ABSTRACT

Higher education is an important step in education where students develop their intellectual abilities and networks that will be useful throughout their lives. As a higher education institution, the university offers a base for creative and critical thinking (Hwarng and Teo, 2001). As an important life investment, the quality services provided by the university are of utmost concern to students throughout their academic life. University quality depends on the users and providers of that service. In reality, improving education quality does not guarantee student satisfaction because universities might be unable to provide students the high-quality services they need all the time. The critical issue is what the student/stakeholder expects from the product/service and how much the product/service meets these expectations. As far as the product/service meeting student expectations, universities claim that they provide high education quality. Today, the customer orientation approach to quality has become a strategic weapon for many universities. Quality assurance initiatives in the Indonesian higher education sector were formulated in 1990 under The Higher Education Long-Term Strategic Plan 1996–2005. This Strategic Plan ensures the quality, autonomy, accountability, evaluation, and accreditation of higher education quality assurance. An important part of measuring quality is the learning process standards. This study focuses on analyzing the learning process standards by developing and testing the criteria based on the National Higher Education Standard Act, which was published by the Ministry of Research and Higher Education, number 44 (2015). Learning process standards, as mentioned in the Act, cover characteristics, plans, implementation of learning process, and student study/work load. Questionnaires were developed according to the learning process standards. The first phase of the research was the grouping of indicators using factor analysis, and the second phase was the analysis of the criteria formed with quality function deployment (QFD). This study comprises the first phase. As a customer-oriented institution, a university should understand the quality expected by its customers/students and other stakeholders. After 119 valid questionnaires were collected, 13 learning process standards were formed that represented student and lecturer needs/expectations covering student-centered learning, facility, feedback, effectiveness, thematic, Islamic values, collaboration, standardization, semester credit system, holistic, integrative, scientific, and contextual. The analysis findings are useful for matching the institution's capabilities to deliver quality education services and meet student expectations in their academic life, particularly in the learning process.

Keywords: Quality assurance, learning process standard, higher education.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

1. INTRODUCTION

In Indonesia and many parts of the world, the university is an important educational institution where students develop skills and intellectual abilities for their future career. Education boosts economic development by producing competitive workers through human capital accumulation (Cabauatan and Manalo, 2018). The five types of higher education institutions in Indonesia are university, institute, college, polytechnic, and academy. Universities may offer better quality services through academic and administrative staff and technical equipment. The quality of the services provided also depends on the users of that service. Research shows that improving quality does not always result in satisfied customers (Bayraktaroglu and Ozgen, 2008), as customers do not always want or expect high quality from a product/service all the time. The critical issue is the capability to match what the customers expect from a product/service and how much of their expectations from the products/services are met. As long as these expectations are met, customers will perceive the institution as delivering high-quality products/services. Quality can be defined as "the characteristics of a product/service that enable to satisfy stated or implied customer needs" (The American Society for Quality, 2005).

Owing to declining public funds and rising tuition fees, higher education worldwide has adopted a customer perspective (Eagle and Brennan, 2007). Paswan and Ganesh (2009) found that many universities are operating as business entities and thus compete for resources and customers or students in higher education markets. Regardless of other stakeholders, in the higher education sector, many studies regard students as the main consumers (Hill, 1995; Moosmayer and Siems, 2012). As main consumers, the opinions of students on teaching, quality services, and studying processes are very relevant for the identification of quality standards in education.

In Indonesia, the education market is a very promising growth sector. According to Moeliodihardjo (2014), the number of young population under 25 years comprises 44.7% of the 250 million Indonesian population. Indonesian participation in higher education is constantly growing, and the British Council estimates that higher education enrolment may reach 7.8 million by 2020 (ICEF-Monitor, 2014). The importance of quality has prompted the Indonesian government to set the Higher Education Long-Term Strategic Plan 1996–2005, which was formulated in the 1990s. This Plan emphasizes quality, autonomy, accountability, evaluation, and accreditation as the five important elements of quality assurance that are needed in the development of higher education.

With the higher education market being a lucrative industry, the government of Indonesia must seriously ensure the quality of this market. All higher education institutions in Indonesia must fulfill the quality assurance standard and hold an operational license. In addition, the accreditation of educational institutions is undertaken as a system of evaluation to ensure quality assurance. The National Education Standards, which established standards in education at the national level in Indonesia, were mandated by a government decree in 2005. Eight items are required to establish the National Education Standards, including 1) content, 2) process, 3) graduate quality and abilities, 4) educational staff, 5) educational resources and infrastructure, 6) management, 7) finance, and 8) educational assessment. All education providers must improve systematically and continuously on these standards. As part of the national higher education standard, the National Education Standards of 2005 legally require internal quality assurance. The 2010 government decree on education management (Pengelolaan dan Penyelenggaraan Pendidikan) requires higher education to have internal quality assurance conducted by a third-party organization. The Ministry of National Education (now the Ministry of Education and Culture) produced and published the

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

booklet, "Quality Assurance System of Higher Education" [Sistem Penjaminan Mutu-Perguruan Tinggi (SPM-PT)] and was responsible for producing the National Higher Education Standard Act, number 44 (2015).

The aim of this study is to analyze the quality expected by university stakeholders, particularly students and lecturers. Specifically, this study is the initial part of gaining quality perceived in the area of learning process standards. The main activity of this research is observing the quality requirement of the Indonesian government's National Higher Education Standard Act, number 44 (2015) and the expectations of students and lecturers on learning process standards. Focus group discussions and expert interviews are conducted to translate the Indonesian government's National Higher Education Standard Act, number 44 (2015) to the questionnaire. The questions focused on meeting the quality expectations of students and lecturers in the learning process standards. Factor analysis is used to group the developed questionnaires to describe important variables generated from research findings. These findings are useful for matching the capabilities of the institution to deliver quality education services [as stated in the Indonesian Government's National Higher Education Standard Act, number 44 (2015)] and the students' expectations in academic life, particularly in the learning process standards.

2. LITERATURE REVIEW

2.1 Indonesian Quality Assurance System

Quality assurance initiatives in the Indonesian Higher Education sector were formulated in the 1990s as part of the Higher Education Long-Term Strategic Plan 1996–2005. This Plan pointed to the importance of quality assurance in higher education. It emphasizes quality, autonomy, accountability, evaluation, and accreditation as the five elements needed for the development of higher education. Continuous quality improvement was positioned as a core factor for the development of higher education institutions. The five elements were meant to provide the administrative foundation for Indonesian higher education institutions in the National Education System Act, as amended in 2003.

The Indonesian Education System Act stipulates that an educational institution must have an operational license from the national or local government. To maintain the operational license, accreditation must be followed. Accreditation of educational institutions is undertaken as an evaluation of the education operational system. The government established an agency called The Badan Akreditasi Nasional Perguruan Tinggi (BAN-PT) to conduct the accreditation for Indonesian higher education institutions. BAN-PT is part of the Directorate General of Higher Education and is an independent, non-profit organization under the direct supervision of the Minister of National Education. The National Education System Act (amended in 2003) requires all educational programs and institutions that have operational licenses to obtain a national accreditation standard. Accreditation agencies investigate whether the standards set have been fulfilled. The National Education Standards, which were mandated by a government decree in 2005, established eight items to assure their own educational quality. The eight items are 1) content, 2) process, 3) graduate quality and abilities, 4) educational staff, 5) educational resources and infrastructure, 6) management, 7) finance, and 8) educational assessment. Accreditation agencies also give advice and recommendations to educational institutions, education programs, and the government (Niad-Ue, 2015).

2.2 Public Services and the Quality of Services

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

The higher education industry is classified more as a service business industry. Services can be provided to consumers through private or public sectors. Both private and public sectors can provide similar services to consumers even though they are different from one another. Public services, such as police protection, education, transportation, welfare programs, hospital, and healthcare, are important for any community because the public is highly dependent on these services. Bhattacharya et al. (2016) emphasized that government services have to offer quality services given that public services represent human welfare and economic growth. The operation of public services requires great transparency, innovation, adequacy, and effectiveness of basic services because the public funds the services through tax and relies highly on these services (Ocampo, 2017). Similarly, private sectors that serve public facilities require quality standards that, in many situations, have higher quality services than public services as they have different financing sources, are more expensive, and require people to pay higher for them.

Quality is an elusive, indistinct, and complicated construct (Parasuraman et al., 1985; Gronroos, 1989). The definition of quality has encountered several developments and has evolved over the years (Ocampo, 2017). Garvin (ADB, 2013) presented quality as a construct focused on five approaches, namely, transcendent or innate excellence, product-based attributes, user-based need satisfaction, manufacturing-based, and value-based (i.e., lower price and costs). In Japanese philosophy, quality is defined as zero defect (Jain and Gupta, 2004). Quality in the services sector is hardly assessed because its tangible cues are limited to the facilities, equipment, and personnel of the service provider (Ocampo, 2017). The absence of tangible cues makes services difficult to evaluate. Services cannot be counted, measured, inventoried, tested, and verified in advance to assure quality. In addition, service performance varies from one encounter to another. In reality, no concrete measure of service quality can be defined. When dealing with services, customers should be involved and participate when transactions are done.

2.3 Quality Model in the Higher Education Sector

From the student perspective, students have many expectations before deciding to enroll in higher education. The image and the quality of higher education institution are defined by the sum of the opinions, ideas, and impressions that people create about the institution (Kotler and Fox, 1995). Image and quality are results of a cumulative process by students when evaluating the different attributes of an institution (Nguyen and Leblanc, 2001). Service quality is one of the key competitive advantages of an institution in the global higher education market (Ronald and Amelia, 2017). Srikatanyoo and Gnoth (2002) defined university image specifically on the basis of its perceived quality, which is determined by its global reputation, physical facilities, academic programs, courses, and academic staff (Soutar and Turner, 2002; Simpson and Tan, 2009).

The increasing importance of quality in service sectors, whether delivered by public or private service providers, has led to the development of several service quality evaluation methods. For example, frameworks were developed to directly address the service quality concerns of hospitals and, similarly, that of the higher education sector (De Jager and Gbadamosi, 2010). One of the pioneering service quality methods (Servqual model) was conceptualized by Parasuraman et al. (1988). The Servqual model comprises various gaps, including a) consumer expectations–management perceptions, b) management perceptions–company quality specifications, c) quality specifications–actual service delivery, d) actual service delivery–external communications, and e) consumer perception as a function of the gap between expected and perceived services (Parasuraman et al., 1985). Among the gaps that exist in the Servqual model, most scholars find the gap between quality specifications

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

and actual service delivery most interesting. This interest led to the introduction of a 10-dimensional construct comprising tangibility, reliability, responsiveness, competence, access, courtesy, communication, credibility, security, and understanding/knowing the customer (Parasuraman et al., 1985). Later, through a series of factor analyses, Parasuraman et al. (1988) observed a strong correlation among these factors. They further modified their Servqual model and only five dimensions remained, namely, tangibility, reliability, responsiveness, assurance, and empathy. Tangibility refers to physical facilities, equipment, and appearance of personnel. Reliability refers to the ability of service providers to perform the promised service dependably and accurately. Responsiveness is the willingness to help and provide prompt service to consumers. Assurance describes the knowledge and courtesy of employees and their capacity to inspire trust and confidence. Empathy includes being caring and providing individualized attention to customers, as well as representing communication, credibility, security, competence, courtesy, understanding/knowing customers, and access. Given that different service sectors exist, the applicability of the Servqual dimensions should be modified (i.e., appropriate omission and addition of dimensions) (Engeland et al. 2000).

As far as a quantitative analysis is concerned, in the higher education sector, the satisfaction of higher education students has generally been studied with methods such as Servqual, QFD, and the Kano model. The contributions of relevant literature are focused on conceptual models for performance in higher education (Alves and Raposo, 2007; Clewes, 2003; Douglas et al., 2008; Schertzer and Schertzer, 2004; Pietro et al., 2015).). The present research, in particular, offers a novel contribution to the applied field of quality in the higher education sector, specifically in Indonesian higher education in the area of learning process standards. The quality constructs used in this research were guided by the Indonesian government's National Higher Education standard. The characteristics of learning process standards, as listed in the National Higher Education Standard Act, number 44 (2015), were used as the source for questionnaire development in this study to measure the learning process standards. The constructs listed in The National Higher Education Standard Act number 44 (2015), as identified by researchers, are interactivity, contextual, collaborations, motivation, thematic, RPS/Learning plan, scientific, effective, credit system, transparency, standard, student-centered learning, feedback, holistic, standard, and facility.

3. RESEARCH SETTING

Yogyakarta, or the special region of Yogyakarta, is situated at the center of Java Island. Yogyakarta is the only region in Indonesia still governed by a monarchy, called the Sultan of Yogyakarta. The Sultan serves as the hereditary governor of Yogyakarta. Although the geographical size of Yogyakarta only represents 0.17% of the total land area of Indonesia, it has important historical and cultural contributions to Indonesian independence, as well as being known as a cultural and student city. Additionally, the majority of Indonesians favor universities located in big cities in Java. The distribution of higher education institutions in Indonesia is highly skewed toward the Java (43.7%) and Sumatera (29.1%) islands, while Maluku and Papua islands only total 3.4%. The combination of traditional and modern cultures brought by students enriches Yogyakarta's unique value. Yogyakarta hosts 104 tertiary institutions ranging from university, institute, college, academy, and polytechnic. According to data from Kopertis V (2015), 65% of students in Yogyakarta go to university for tertiary education. Figure 1 shows the student distribution in tertiary education in Yogyakarta. The place of origin for students who study in Yogyakarta is dominated by students from Java.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

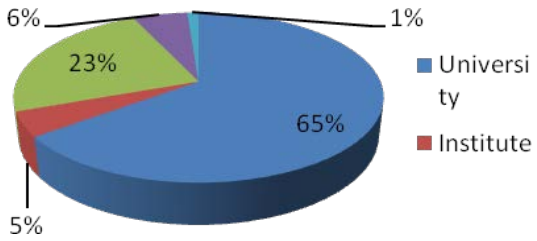

Figure 1. Tertiary education distribution of students in Yogyakarta (2015).

4. RESEARCH METHODOLOGY

The purpose of this study is to identify factors responsible for determining the expected learning process standards by a university's stakeholders (students and lecturers). The factors were initially developed from the National Higher Education Standard Act, published by the Ministry of Research and Higher Education, number 44 (2015). This study is the initial part in determining the quality of learning process standards and is thus exploratory. As suggested in the literature review, service quality dimensions and measurements need to be modified to adjust with different settings. In this study, service quality was measured in the higher education industry. Specifically, the measure was developed in the areas of Indonesian higher education learning process standards. Factor analysis using principal component analysis (PCA) was conducted to determine the variables in the learning process standards.

4.1 Research Variables

The learning process standards mentioned in the National Higher Education Standard Act covers characteristics, plans, implementation of learning process, and student study/work load. After further study, the four standards were translated into the following variables: interactivity, contextual, collaborations, motivation, thematic, RPS/Learning plan, scientific, effective, credit system, transparency, standard, student-centered learning, feedback, holistic, standard, and facility. This questionnaire attempted to capture the expectations of students and lecturers on the learning process standards in the Department of Management. A five-point Likert scale was used as the response format for the items, with assigned values ranging from 1 = not very important, 2 = not important, 3 = not know, 4 = important, and 5 = very important.

4.2 Population and Sampling

The study was conducted in the Management Department, Economic Faculty, Universitas Islam Indonesia. Full-time university students aged 17 years and over were eligible to participate in the survey. As the institution is a customer-oriented university, students made up most of the sample. All lecturers in the department were given the opportunity to participate in the questionnaire completion. After the questionnaire was distributed via purposive sampling method, 119 valid samples were collected in the first phase of the study.

5. DATA ANALYSIS AND DISCUSSION

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5.1 Data Analysis

5.1.1 Respondent profile

The sample included 47.9% (57) male students and 52.1% (62) female students. The students were enrolled from 2014 to 2017. The percentages of students according to the year of enrollment were 34.5% (41) in 2014, 37.8% (45) in 2015, 22.7% (27) in 2016, and 5% (6) in 2017.

5.1.2 Analysis of Factor

PCA with varimax rotation using SPSS software was conducted on the 58 items. The Kaiser–Meyer–Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO=0.851 (Table 1). All KMOs for individual items (measures of sample adequacy) were > 0.6, which was above the acceptable limit of 0.5 (Field, 2009). Bartlett's test of sphericity < 0.001 indicated that correlations between items were sufficiently large for PCA. In addition, communalities showed satisfactory results (Table 2). The 58 items were developed from the 16 required dimensions for learning process standards, as stated in the Ministry of Research and Higher Education, number 44 (2015). A factor analysis of all independent variables pertaining to the Ministry of Research and Higher Education criteria on key attributes of learning process standards was conducted to reduce the number of items to a manageable number of factors. A varimax rotated PCA was used on the 58 items for a sample of 119 students and lecturers. KMO statistics of 0.851 and Bartlett's test of sphericity statistics of 6106.099 indicated that the data were suitable for conducting factor analysis (Norusis/SPSS Inc., 1988). Table 2 indicates that no item loading was below 0.5. Hair et al. (2006) noted that communalities should be > 0.5, and that factor loading > 0.5 is considered practically significant.

Table 1. KMO

KMO and Bartlett's Test		
Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		.851
Bartlett's Test of Sphericity	Approx. Chi-Square	6106.099
	Df	1653
	Sig.	0.000

Table 2. Communalities

	Initial	Extraction		Initial	Extraction		Initial	Extraction
IN1	1.000	.744	EF2	1.000	.675	SKS2	1.000	.771
IN2	1.000	.803	EF3	1.000	.717	SKS3	1.000	.809
IN3	1.000	.676	KOL1	1.000	.830	ISL1	1.000	.799
HOL1	1.000	.738	KOL2	1.000	.817	ISL2	1.000	.800
HOL2	1.000	.649	KOL3	1.000	.794	ISL3	1.000	.627
HOL3	1.000	.708	KOL4	1.000	.800	MOT1	1.000	.676
INTG1	1.000	.757	KOL5	1.000	.856	MOT2	1.000	.671
INTG2	1.000	.769	KOL6	1.000	.745	MOT3	1.000	.779
SAIN1	1.000	.709	FOK3	1.000	.786	STAND1	1.000	.832
SAIN2	1.000	.741	FOK1	1.000	.779	STAND2	1.000	.894

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SAIN3	1.000	.671	FOK2	1.000	.775	STAND3	1.000	.819
SAIN4	1.000	.755	RPS1	1.000	.793	TRANS1	1.000	.678
KON1	1.000	.640	RPS2	1.000	.830	TRANS2	1.000	.660
KON2	1.000	.741	RPS3	1.000	.652	TRANS3	1.000	.763
TEM1	1.000	.821	RPS4	1.000	.708	FAS1	1.000	.705
TEM2	1.000	.880	UB1	1.000	.770	FAS2	1.000	.798
TEM3	1.000	.792	UB2	1.000	.840	FAS3	1.000	.713
TEM4	1.000	.639	UB3	1.000	.904	FAS4	1.000	.717
EF1	1.000	.731	UB4	1.000	.918	FAS5	1.000	.827
			SKS11	1.000	.862	Extraction Method: PCA		

After finishing running the data using SPSS, factor analysis established only 13 variables from the 16 variables proposed.

Table 3. Total Variance Explained

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.557	35.444	35.444	20.557	35.444	35.444	5.965	10.284	10.284
2	4.702	8.107	43.550	4.702	8.107	43.550	4.938	8.513	18.797
3	3.556	6.131	49.681	3.556	6.131	49.681	4.716	8.131	26.928
4	2.477	4.270	53.952	2.477	4.270	53.952	4.429	7.636	34.565
5	1.939	3.344	57.295	1.939	3.344	57.295	3.310	5.707	40.272
6	1.712	2.952	60.247	1.712	2.952	60.247	3.181	5.485	45.757
7	1.637	2.822	63.069	1.637	2.822	63.069	3.079	5.309	51.066
8	1.508	2.600	65.669	1.508	2.600	65.669	2.820	4.861	55.927
9	1.369	2.361	68.030	1.369	2.361	68.030	2.754	4.749	60.676
10	1.324	2.283	70.312	1.324	2.283	70.312	2.673	4.609	65.284
11	1.172	2.021	72.333	1.172	2.021	72.333	2.473	4.264	69.548
12	1.148	1.980	74.313	1.148	1.980	74.313	2.146	3.701	73.249
13	1.053	1.816	76.129	1.053	1.816	76.129	1.670	2.880	76.129
14	.983	1.695	77.824						
15	.866	1.492	79.316						
16	.831	1.432	80.748						
17	.765	1.319	82.068						

Extraction Method: PCA (not all shown)

5.1.3 Discussions

Only a few items were dropped from the survey instrument at the beginning of the factor analysis. A 13-factor solution was obtained based on the minimum eigenvalue of one. All 13 factors cumulatively explained 76.129% of the variance in the original data set. Factor 1 was labeled *Student-centered learning*. Student-centered learning means that the learning process should emphasize the students' involvement in developing their creativity, capacities, personalities, and other needs. Student-centered learning should also encourage student

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

independence in seeking knowledge. Factor 2 was labeled *Facility*. Facility means that the learning process expected should be supported by infrastructure and facilities that support the achievement of the learning target. Factor 3 was labeled *Feedback*, which refers to a situation where information about reactions to a learning process from the students' performance is used as a basis for improvement. The learning process should be followed by an improvement from what students have learned. Factor 4 was labeled *Effectiveness*, which means that the learning process reaches the degree at which learning is successful in producing the desired result. Within the time limit, the learning process should be designed to reach optimum results. Factor 5 was labeled *Thematic*. Thematic in the learning process refers to matching the learning into related knowledge (management study). Additionally, thematic is the ability to link the main discipline with other disciplines (inter-discipline) in facing realities. Factor 6 was labeled *Islamic value*. In the learning process, Islamic value refers to the ability of the learning process to link and apply the knowledge in accordance with Islamic values. Islamic values should always be considered when making decision in any knowledge application. Factor 7 was labeled *Collaboration*, which refers to a situation among students where learning involves interactions, cooperation, and sharing of skills and knowledge. This aspect will increase the ability of students to work with and build trust in a team. Factor 8 was labeled *Standardization*. Standardization in the learning process refers to conformity of the learning process to a standard. Even though classes are handled by different instructors, a standard should be followed. The standard can be in terms of evaluation, delivery, materials, and facilities. Factor 9 was labeled *Credit system*. Credit system refers to the amount of student workload in the curriculum. Given that students study a variety of subjects every semester, the student workload should be optimal and achievable. Factor 10 was labeled *Holistic*, which means that the learning process should develop a comprehensive way of thinking. The learning process should enable students to explore distinctive advantages as well as embrace local and national wisdom. Factor 11 was labeled *Integrative*, which refers to the ability to integrate the learning from one discipline with other disciplines. Interdisciplinary learning should be encouraged as the learning process expected by students. Factor 12 was labeled *Scientific*. In the learning process, scientific refers to students' expectation that the learning process will emphasize scientific approaches. The expectation is that the academic atmosphere should be strong with scientific norms, values, religiosity, and national values. Factor 13 was labeled *Contextual*. In the learning process, contextual refers to the emphasis on the delivery of learning on problem-solving skills that are closely related to individual expertise. Students should use and exploit their expertise and capacities to face and solve problems.

The above 13 factors were derived from the factor analysis. Initially, 16 factors were proposed to describe the learning process in the Indonesian higher education, according to the National Higher Education Standard Act. After running the factor analysis, the study concluded with the 13 factors identified as characteristics of the learning process standards, as expected by students and lecturers in the Management Department.

6. CONCLUSION AND RECOMMENDATION

The Higher Education Long-Term Strategic Plan ensures the importance of quality assurance in higher education. An important part of quality is the learning process standards. This study analyzed the learning process standards by developing and testing the criteria based on the National Higher Education Standard Act, published by the Ministry of Research and Higher Education, number 44 (2015). The learning process standards, as mentioned in the Act, cover characteristics, plans, implementation of learning process, and student

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

study/work load. Out of 16 factors identified from the National Higher Education Standard Act, this study developed questionnaires and conducted a factor analysis using PCA.

After focus group discussions with students and interviews with lecturers, 58 questionnaires were developed to represent 16 factors in the learning process standards. The surveys were distributed to active students from the Management Department enrolled in different years from 2014 to 2017. After 119 valid questionnaires were collected and analyzed, 13 learning process standards were formed representing the needs/expectations of students and lecturers, such as student-centered learning, facility, feedback, effectiveness, thematic, Islamic values, collaboration, standardization, semester credit system, holistic, integrative, scientific, and contextual areas. These findings confirmed the 13 factors expected by students and lecturers to be well delivered in the learning process in the Management Department. These findings are useful for matching the institution's capabilities to deliver quality education in the learning process and students' expectations in their academic life.

ACKNOWLEDGEMENTS

The authors are thankful to Universitas Islam Indonesia, Yogyakarta, Indonesia for supporting this research and providing the necessary facilities.

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