Analysis of the Development of Academic Service Characteristics in the Monitoring and Evaluation of Student Satisfaction in Higher Education

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Abstract. This research aims to develop the characteristics of physical evidence, reliability, responsiveness, assurance, and empathy in a model for monitoring and evaluating student satisfaction. To test the effectiveness of academic service characteristics developed to increase student satisfaction. This research uses the ADDIE method. The subjects of this research are students. Meanwhile, the N-Gain test involves lecturers and staff. The data collection techniques used were observation, interviews and questionnaires. The initial research instruments, FGD and N-Gain Test were validated by LLDIKTI facilitators. The research results show that the development of academic service characteristics in the implementation of student satisfaction monitoring and evaluation provides perfection in the academic service database in the implementation of evaluation stages in PPEPP. Furthermore, the n-gain test proves that the developed characteristics are effective in implementation.

Keywords: Academics, Academic Services, Monitoring, Evaluation, Student Satisfaction.

1 Introduction

The quality of academic services at universities has not yet reached the highest level of satisfaction among students. Existing services still do not meet the characteristics of academic services. The implementation of monitoring and evaluation of student satisfaction has not been properly used to improve the quality of academic services. This is because the implementation of student satisfaction monitoring and evaluation has not been an important factor in improving academic services and making policies related to academic services in higher education. The existence of student satisfaction monitoring and evaluation has so far only been a complementary tool for institutional accreditation and programme accreditation. Monitoring

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and evaluation of student satisfaction should be a determinant of academic services, which is the key to the success of a study programme in the arena of competition for the attention of students and parents. The effectiveness of the implementation of the monitoring and evaluation of student satisfaction has not been able to guarantee the continuity of the quality services of the study programme and the study programme management unit. For this reason, it is necessary to conduct research that aims to (1) find the characteristics of student satisfaction monitoring and evaluation model in improving the quality of academic services in higher education; (2) determine the feasibility of student satisfaction monitoring and evaluation characteristics in improving the quality of academic services in higher education; (3) to analyse the effectiveness of student satisfaction monitoring and evaluation characteristics in improving the quality of academic services at the Faculty of Social and Political Sciences, Universitas Sumatera Utara

So far, the service models used in universities vary depending on the conditions and focus developed by the universities, such as Service Quality Model, Importance Performance Model, Kano Model, Customer Relationship Model, Servperf Model and Hedpef Model. However, the most appropriate model to directly compare student expectations with the performance of the study programme management unit and the study programme is the Servqual Model. An illustration of the extent of customer expectations for the services they receive through characteristics that are tangibles, reliability, responsiveness, assurance and empathy to develop the servqual model [1], [2]. Then, the characteristics of this model are easier to apply during the research because they are in line with academic services based on quality standards and norms in higher education.

The implementation of these characteristics requires a consistent policy to realise improvements in the management of higher education. The Law on Higher Education No. 12 of 2012 does indeed contain this, although it has not been properly implemented. Article 52, paragraph 2, states that the quality assurance referred to in paragraph 1 may be carried out through the stages of determination, implementation, evaluation, control and improvement of a quality standard. This means that the characteristics of planned academic services can be implemented continuously through stages. All this is called IQAS (Internal Quality Assurance System) as stated in article 53 (paragraph a). The IQAS is a framework designed and implemented by higher education institutions to ensure that the service criteria, spread across educational standards, research, service and delivery, reach the expected level of quality, such as (a) improving the quality of educational services; (b) creating standards and implementation documents. The IQAS helps higher education institutions to develop and set higher education standards; (c) implement the internal evaluation process; (d) obtain accreditation and recognition.The IQAS plays an important role in preparing higher education institutions for the accreditation process; (e) enhancing reputation and competitiveness. Through the effective implementation of the IQAS , higher education institutions can improve their reputation in terms of the quality of educational services; (f) carrying out institutional development. The IQAS supports higher education institutions in carrying out comprehensive evaluations of all aspects of academic and administrative service activities.

Based on the application of the IQAS in PPEPP, through this research it is necessary to develop the characteristics of the servqual model by paying attention to the existence of PPEPP implementation such as elements of leadership services in the faculty, elements of academic leadership services carried out by study programs, elements of service implemented in the new student recruitment system, elements of services in the academic advisory lecturer program and

service elements related to creating a strong academic atmosphere and climate. All of these characteristics of academic services must be measured for their implementation and their sustainability maintained through evaluation actions. Monitoring and Evaluation is a management evaluation option implemented by Study Program Management Units and Study Programs in achieving goals [3], [4]. To measure the academic services implemented and the level of student satisfaction obtained, student satisfaction monev is used. In this research, it was found that student satisfaction monitoring using the Goal-Oriented Evaluation (GEO) model was used more intensively because it focused more on the purpose of accreditation solely to measure the quality management performance required by National Accreditation Agency for Higher Education. Then this model is developed based on input, process and output and outcomes. Of course, this was obtained after receiving input and improvements from various other monitoring and evaluation models such as GFE, FAR, MCE, RE, CIPP, CSE-UCLA, and DEM to perfect the final form of the student satisfaction monitoring and evaluation model. This student satisfaction monitoring and evaluation model can help decision makers at management review meetings as an alternative to solving development and improvement problems in higher education quality management through quality academic services.

Based on the results of the survey analysis of initial research data, it can be seen that the level of student satisfaction with the services provided in all categorizations/indicators used to measure services (availability of infrastructure, facilities and information systems, employee performance, services from faculty leadership elements, services from study program leaders, student recruitment systems new, academic advising process, and developed academic atmosphere) show low results or an average of below 50%. Furthermore, interviews were conducted with the leadership of the Study Program and Study Program Management Unit as well as quality assurance elements which revealed: service quality standards had not been integrated with existing student satisfaction evaluations. Supporting documents for student satisfaction monitoring and evaluation are incomplete and prepared only for accreditation purposes. There is very minimal understanding regarding the implementation of student satisfaction monitoring and evaluation among leadership elements and quality assurance. The characteristics of academic services measured so far are also not developed and are mere formalities. It is necessary to prepare characteristics that are in accordance with the application of the IQAS in measuring academic services through student satisfaction monitoring and evaluation. The characteristics captured must be implemented and evaluated for their implementation and tested for effectiveness in the IQAS annual cycle at the PPEPP stage.

2 Methods

The research method used is Research and Development (R&D) with the ADDIE model approach. To support this research method, the subjects of this research population in the trial were students at FISIP USU . Meanwhile, the Gain Test samples were used by lecturers and staff at FISIP USU . Data collection techniques were carried out using observation, interviews and questionnaires. The research instrument during the trial was validated and reliable. Instruments for FGD, Implementation and Gain Test were also validated by The Higher Education Services Institutes or LLDIKTI facilitators with very feasible results. For N-Gain testing, it is tested in the effective category. This shows that the characteristics of the Student

Satisfaction Monitoring and Evaluation Model developed have proven effective in improving academic services at FISIP USU.

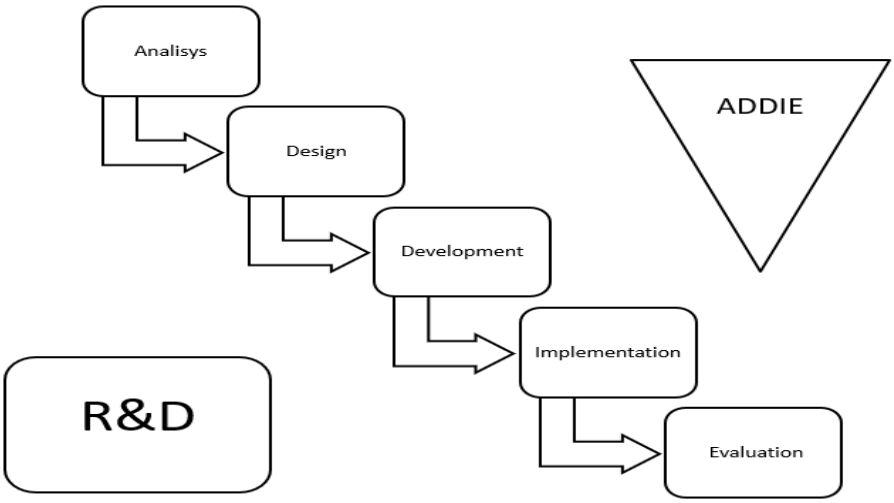

Fig.1 Research Stages

2.1 Limited Scale Implementation and Wide Scale Implementation

The research instrument created was tested with SPP

Table 1. Student Satisfaction Level

Levels	Results score	Results Criteria
1	0 – 20%	Not satisfied
2	21 – 40%	Quite Satisfied
3	41 – 60%	Neutral
4	61 – 80%	Satisfied
5	81 – 100%	Very satisfied

Table 2. Table of Implementation of Monitoring and Evaluation Characteristics for Student Satisfaction

Indicators/Categorization	Study Program			
	Communication Studies	Social welfare	Sociology	Public Administration Science
Availability of Infrastructure, Facilities and Information Systems	4.66	4.67	4.57	4.81

Employee Performance	4.59	4.59	4.59	4.71
Elements of Faculty Leadership	4.60	4.64	4.61	4.67
Study Program Leader	4.64	4.65	4.63	4.72
New Student Recruitment System	4.82	4.67	4.73	4.75
Academic Advising Process	4.78	4.83	4.80	4.74
Academic Atmosphere	4.68	4.85	4.74	4.70
Average	4.66	4.67	4.64	4.74
Number of Samples	326	373	233	327

2.2 Effectiveness Testing

Theoretically, the reason for using the gain test is to determine the increase in data from the pretest-posttest results from the improvement in academic services experienced by students during college. Normalized gain or abbreviated as N-Gain is a comparison of the actual gain score with the maximum gain score [5], [6], [7]. The actual improvement score is the improvement score the respondent received, while the maximum improvement score is the highest improvement score they could possibly obtain. The following formula shows the calculation of this normalized gain (N-Gain) score.

$$< g > = \frac{(Sf) - (Si)}{(Sm) - (Si)} \times 100\%$$

Information:

g = normalized gain (N-Gain)

Sf = posttest

Si = pretest score

Sm = maximum score

Table 3. Table of N-Gain Respondents

N-Gain Responder	Experimental Group/Class	Control Group/Class	Amount

Lecturer	25	20	45
Educational staff	20	19	39
Amount	45	39	84

Table 4. Descriptive N-Gain Data

	Group			Statistics	Std. Error
N_Gain Value	Experiment	Mean		**79.7927**	1.47045
		95% Confidence Interval for Mean	Lower Bound	76.8291	
			Upper Bound	82.7562	
		5% Trimmed Mean		80.6865	
		Median		83.3333	
		Variance		97,301	
		Std. Deviation		9.86411	
		Minimum		41.86	
		Maximum		92.68	
		Range		50.82	
		Interquartile Range		13.53	
		Skewness		-1,596	,354
		Kurtosis		3,672	,695
	Control	Mean		**31.2205**	1.31365
		95% Confidence Interval for Mean	Lower Bound	28.5612	
			Upper Bound	33.8799	
		5% Trimmed Mean		31.5955	
		Median		31.4815	
		Variance		67,302	
		Std. Deviation		8.20377	
		Minimum		6.52	
		Maximum		47.73	
		Range		41.21	

Group		Statistics	Std. Error
	Interquartile Range	11.92	
	Skewness	-,746	,378
	Kurtosis	1,262	,741

3 Results and Discussion

3.1 Characteristics of Academic Services During Student Satisfaction Monitoring and Evaluation

Quality academic services from universities to students have now become an important consideration in choosing a place to study in Indonesia in order to realize their future. This condition creates competition among universities in terms of providing the best academic services to prospective students. A higher education institution faces greater challenges due to globalization, which causes very competitive competition in terms of services between universities [8]. To retain students and capture the education market, various higher education institutions rely heavily on the quality of their services [9].

If a university focuses on improving the quality of its academic services, the university will actually make promotion to the community easier. In line with this, service quality is considered the most important component for increasing the competence and competitiveness of higher education institutions [10]. Therefore, activities in the form of providing quality services are the cause of success in the battle between higher education institutions. In this regard, it can be argued that in a highly competitive higher education environment where universities strive to meet student expectations, service quality is an important component of excellence [11]. Ideas such as institutional reputation, student satisfaction, and student loyalty are strategically important.

It is realized that academic service activities at the Study Program Management Unit and Study Program level have not received clear data from the results of audits that have been carried out. The monitoring and evaluation of student satisfaction that has been provided for study program accreditation needs so far cannot be relied on to measure the quality of services provided. BAN-Dikti's evaluation demands become difficult to carry out if the role of student satisfaction monitoring and evaluation is not coupled with the need for academic services that should be provided [12], [13]. Higher education academic services are directly proportional to the study program or student expectations, resulting in student satisfaction. This is in line with many studies [14],[15],[16].

3.2 Analysis

Implementing student satisfaction monitoring and evaluation requires characteristics possessed by the Servqual Gun Model direct comparison between student expectations and the achievements of the Study Program Management Unit. What has been written in the Higher Education Quality Standards must be evaluated directly and its weaknesses recognized and its achievements improved. It has been described in relation to how far stakeholders' expectations

are regarding the services obtained [1], [2]. This model uses the characteristics of tangibles, reliability, responsiveness, assurance, and empathy. The characteristics of this model are easier to implement and develop in higher education and can be used to improve service quality based on student expectations. For implementation in higher education, the characteristics of this model can be developed by taking into account: (a) services from Faculty Leaders; (b) services from the Study Program Leader; (c) services from the New Student Recruitment System; (d) services from Academic Advising; (e) services from Academic Atmosphere Activities. This is done because the need for quality standards in implementing SPMI includes additional criteria and not only the criteria in the Servqual model and the Higher Education service indicators alone. Finally, it can be said that the model formed is a new academic service model because it contains the characteristics of the servqual model which has been developed and implemented in the quality assurance system. Monev that uses these ten characteristics is called monev servqual plus.

Why is monitoring and evaluation chosen to measure academic service efforts in higher education? This is in accordance with the opinion that monev or monitoring and evaluation is an important tool for public management that can be used to improve how government and business achieve results [3]. Higher education institutions that implement higher education quality management, the implementation of education must be monitored and evaluated [4]. Therefore, it is important to know how student satisfaction with the services they receive impacts the quality of education.

3.3 Design

Initially, the characteristics used in the Student Satisfaction Monev were the characteristics in the Goal-Oriented Evaluation (GOE) Model. After being developed in terms of: input , process and output as well as outcomes, improvements are made to complete the implementation of a quality assurance system through the intersection of various monev/evaluation models (GFE, FAR, CE, RE, CIPP, CSE-UCLA, and DEM) which are ever existed. This was done to perfect the final form of the student satisfaction monitoring and evaluation model. At first it only talked about objectives with less attention to processes and inputs, then this new student satisfaction monitoring and evaluation model was developed regarding guaranteed inputs, processes related to academic services, infrastructure, learning and educational administration that were implemented as well as trusted and guaranteed products and outcomes. produced and useful. Finally, the student satisfaction monitoring and evaluation model, which was initially in the form of GEO, then received refinement of the model to become the perfect form for implementing IQAS in higher education. This model is named the IQAS Student Satisfaction Monitoring and Evaluation Model.

Most of the differences in the characteristics of the initial student satisfaction monitoring and evaluation model lie in the monitoring or evaluation stages related to decision-making tools responsible for planning, operation, output and outcomes of academic service programs based on the quality standard matrix applied in IQAS . The advantage of this model is that it provides a complete monitoring and evaluation format for each stage namely : input, process, output, and benefits of the products produced. In addition, this model has the potential to assist decision making at management review meetings, where faculty and study program leaders act as decision-making leaders by providing problem-solving solutions.

3.4 Model Feasibility

The feasibility of student satisfaction monitoring and evaluation is an assessment of how effective, relevant and reliable the monitoring and evaluation is in measuring and evaluating the level of student satisfaction in an ongoing quality cycle. The results of the existing analysis and design prove that the monev produced comes from valid and reliable instruments and is well monitored by LLDIKTI facilitators who assess and maintain and guarantee its quality. This monitoring and evaluation deserves to have its characteristics developed and used to measure academic services through enhanced student satisfaction monitoring and evaluation. Proper monitoring and evaluation characteristics will help institutions understand student needs and satisfaction, making it possible to take appropriate actions to increase student interest and competitiveness as well as their accreditation ranking.

3.5 Development

Development is a follow-up stage to the design that has been carried out at the design stage. The guidebook, indicators and monitoring and evaluation instruments for student satisfaction received input from initial research, theory, research results, articles and FGDs. The development of guidebooks, indicators and instruments was carried out to improve the monitoring and evaluation characteristics of student satisfaction in higher education. The guidebook was created with indicators and instruments that have received validation from the LL-Dikti Facilitator so that it is ready to be used in the implementation of small-scale and large-scale student satisfaction monitoring and evaluation. The guidebook is used as a reference for the student satisfaction monitoring and evaluation team formed by the Dean in carrying out Student Satisfaction Monitoring and Evaluation. Validity and reliability tests on the existence of student satisfaction monitoring and evaluation characteristics have been carried out using SPSS and two teams of experts as LL-DIKTI facilitators.

The implementation of IQAS in the learning and academic administration sectors requires evaluation and internal quality audits that are able to measure the achievements obtained [17]. So in essence, the characteristics of academic services in IQAS student satisfaction monitoring and evaluation are suitable for application in the field. This is because the basic ingredients for its formation are taken from a combination of the servqual plus model (academic services during IQAS) and the GOE model plus other evaluation models (slice models). The indicators or characteristics of academic services that are formed are combined with the specificities of the evaluation model implemented in the PDCA/PPEPP quality cycle to form a new model called the IQAS Student Satisfaction Monitoring and Evaluation Model. The existence of instruments and documents supporting the implementation of the IQAS Student Satisfaction Monev have been presented in the FGD and validated with SPSS and LLDIKTI Facilitators. For product effectiveness (IQAS Student Satisfaction Monitoring) is carried out using the N-Gain Test. So the IQAS Student Satisfaction Monitoring and Evaluation model is suitable for implementation in limited and extensive tests.

3.6 Effectiveness of Academic Service Characteristics in Student Satisfaction Monitoring and Evaluation

The monitoring and evaluation implementation plan is designed to be carried out on a small scale (1 study program) and on a large scale (3 study programs). However, before carrying out

a small-scale monitoring and evaluation of student satisfaction, a pretest is carried out regarding the condition of academic services and the implementation of the monitoring and evaluation that has been carried out so far. After the student satisfaction monitoring and evaluation was carried out on a wide scale, posttest data was collected again to see the condition of academic services and the implementation of student satisfaction monitoring and evaluation.

The implementation of limited-scale student satisfaction monitoring and evaluation and the implementation of broad-scale student satisfaction monitoring and evaluation can be seen in the form of results reports and follow-up effort reports. Measuring academic services through job satisfaction monitoring and evaluation starts from the instruments that have been prepared. This instrument contains indicators for the implementation of academic services. This indicator is an input in the student satisfaction model applied in higher education. The input obtained regarding existing indicators has not been measurable because so far it has been adjusted to the requirements of the matrix 4 for filling out the accreditation form 7 standards. After the implementation of the 9 existing criteria/indicators, they received critical input from the FGD and were refined in the FGD forum. It was in this FGD forum that the student satisfaction monitoring and evaluation instrument and the conceptual model received input and were refined so that a theoretical model was formed.

The instruments and indicators in the conceptual model received input and development through preliminary research and FGD. The instrument used in student satisfaction monitoring and evaluation is in the form of a questionnaire with Likert scale answer choices. The following is a table of the distribution of questions on the student satisfaction monitoring and evaluation instrument: All characteristics used in student satisfaction monitoring and evaluation show a very satisfied achievement or the achievement interval is between 4.21 to 5.00. A high level of student satisfaction indicates quality service to students while studying at university. The distribution of data in the N-Gain Test aims to prove the effectiveness of the products produced in this research panel. The results of the data distribution carried out and the calculations carried out show that the characteristics of the product produced are effective.

4 Conclusion

In general, the research results show that (1) the formation of academic service characteristics used in the IQAS cycle: tangibles, reliability, responsiveness, assurance, empathy, academic service elements of faculty leadership; academic services for study program leadership elements; new student recruitment system services; academic advising services; and academic atmosphere activity services with increased results in academic services to become the basis of a monitoring and evaluation model for student satisfaction in higher education; (2) the feasibility of the characteristics studied in the student satisfaction monitoring and evaluation process that has been carried out in improving the quality of academic services in higher education is proven through SPSS results and the decisions of existing LLDIKTI facilitators; (3) the monitoring and evaluation characteristics of IQAS student satisfaction have been proven effective in improving the quality of academic services in higher education. These m onev characteristics can be a solution to improving academic services in faculties and study programs with a serious focus on satisfaction felt at the student level .

Suggestions

Based on the benefits of the research stated previously, the researcher can make several suggestions to: (1) The Ad-Hock Team implementing Student Satisfaction Monev in higher education must gain additional insight into the quality and competence related to the implementation of student satisfaction Monev which has so far been carried out separately from service management. academic. The implementation of student satisfaction monitoring and evaluation can be directed not only for accreditation purposes but can be an effective measuring tool for the development of quality academic services in the faculties and study programs owned. Activities that are guided by these quality standards must be carried out based on the monev characteristics that have been discovered; (2) Leaders of Study Program Management Units and Study Programs in tertiary institutions can use the results of this research to become baseline data related to academic services at Management Review Meetings. Apart from that, the results of this research can be used as material for making decisions regarding the quality of academic services to students; (3) Quality assurance personnel in higher education institutions can use this research as a reference for documentation and technical implementation of monitoring and evaluation of student satisfaction at the higher education institution where they serve. We should use the development of student satisfaction monitoring and evaluation characteristics as a means to correct and create a real baseline of data related to the services provided so far to students. This can be valuable input for faculty and study program leaders in preparing new strategic plans; (4) Leaders of quality assurance institutions in higher education can use this research as very valuable feedback for holding academic review meetings related to academic services to students in all faculties. It is necessary to carry out regular training and implementation assistance related to the implementation of monitoring and evaluation in faculties and study programs.

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