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Assessment on the Need for Study Program Curriculum Development: A Preparatory Study for International Accreditation

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Abstract
The current research aimed to investigate the need for study program to develop curriculum to meet the demands of international accreditation. CIPPO (Context, Input, Process, Product, Outcomes) evaluation model was applied through a mixed-method approach with sequential exploratory strategy: 1) collecting and analyzing qualitative data by presenting the needs of each scope of study from the stakeholder point of view and reviewing curriculum documents; 2) analyzing quantitative data from the questionnaires to measure the satisfaction level and fulfillment of the improvement needs. The result of the context evaluation suggested the need to review the curriculum documents, to adjust the learning load, and some of the contents of the semester learning plan. The input evaluation found that the availability and quality of the lecturers were good, and the learning facilities and resources were adequately provided, yet their utilization required improvement. The result of the process evaluation showed that the learning implementation was perceived to be good, so it necessitated the lecturer competence improvement in benefiting information technology media and learning modules based on researches. The result of the product evaluation suggested that the learning assessment given by the lecturers was good that the improvement demand lay in the assessment of attitude. The outcome evaluation showed that the satisfaction of alumni and alumni users was good, and it required continuous improvement in the contexts, input, processes and products as the main services of the study program.

Keywords: OBE, CIPPO, International Accreditation, Curriculum Development, Assessment on the Needs for Curriculum Development

1. Introduction

Accreditation plays a prominent role in improving the quality of graduates. It contributes greater during the initial accreditation process compared to re-accreditation. In addition, it provides the most important contribution

inherent to learning outcomes. It also contributes more to the improvement of learning processes and practices (Ulker & Bakioglu, 2019). Accreditation affects the intensity of student learning and hopes for success in the future (Nisa, 2018). A high accreditation value is perceived by students to support learning motivation because it gives better future opportunities. A high accreditation value can increase the number of students, student satisfaction, performance, and university reputation compared to that of the International Organization for Standardization (ISO) (Kartikasari et al., 2018).

Japan's experience in international accreditation reported that the internationalization currently required for higher education in Japan is divided into several elements as a gradual university improvement: (1) international applicability and compatibility, (2) openness, (3) flexibility, (4) connectivity, (5) mobility, and (6) diversity. If (1) can be achieved, it will lead to (2), and if (2) can be achieved, it will lead to (3). In this way, moving forward with (1) to (6) as a chain reaction will result in internationalization progress at the institutional level (Ota, 2018). Bold deregulation and broad expansion of university autonomy by the government are essential to facilitating this chain reaction internationalization model.

In the international context, accreditation is perceived as a tool to facilitate quality education; instruments for improving academic/non-academic services, system transparency, and accountability at the appropriate level. The importance of globally accepted standards/criteria has been emphasized by various well-known international institutions such as ISO, ANQAHE, ENQA, CHEA and INQAAHE, and others. A number of international alliances and agreements have been created around the world to establish shared best practices and standards such as treaties (WA, SA, DA) anagreementsnt (IPEA, IETA, AIET, APECEA), whose members are hundreds of countries. The accreditation process involves quality assurance, teaching-learning, quality research and innovation, reallocation of resources, development of some policy guidelines and their implementation, and others (Kumar et al., 2020).

In the context of higher education in Indonesia, government has encouraged existing universities to compete for international accreditation that university graduates can compete internationally. The Regulation of the Minister of Education and Culture, Number 5/2020 Article 9 states that: (1) study programs with an A accreditation have the opportunity to be accredited by an international accreditation board recommended by the Ministry of Education and Culture; and (2) the accreditation results from the International Agency are equivalent to Excellent Accreditation rating from the National Accreditation Board for Higher Education (BAN-PT).

The recognition by international accreditation equivalence with the Excellent Accreditation by BAN-PT is a distinctive motivation for study programs or universities to reach the accreditation. It is a great opportunity for the study programs which have previously been accredited A, and there is no need to apply for accreditation to BAN-PT, in addition to the great advantages and opportunities to collaborate with excellent universities in various parts of the world and become reference for the development of similar study programs in the country. It could be a motivating factor for universities to accredit their study programs.

Very few universities in Indonesia gain an international accreditation recognized by the government. Thereweree 14,429 study programs from 3,171 higher education institutions under the Ministry of Education and Culture in 2018 (Kementerian Riset, Teknologi, dan Pendidikan Tinggi, 2018). The Head of the ITB Quality Assurance Unit noted that out of this number, only 396 (2.74%) study programshade been accredited, 61 percent of which are internationally accredited and 39 percent are by AUN-QA (ASEAN University Network-Quality Assurance) assessment (Arifin, 2018). For universities under the Ministry of Religious Affairs, there are approximately 3000 study programs widely spread in 58 State Islamic Religious Higher Education (PTKIN) and 763 Private Islamic Religious Higher Education (PTKIS) (Kementerian Agama, 2017). Only 4 (0.13%) of them are internationally accredited at two PTKIN (Kementerian Agama, 2020).

The acquisition of international accreditation proves the recognition of quality and interest of the prospective students, graduate users, and society. This is a motivating factor for the head of study programs to assess the curriculum development needs to fit the demands of international accreditation assessments. The result of this

assessment could be an important input for the study programs to improve and adjust the curriculum components to the international accreditation standards.

2. Research Method

2.1. Evaluation Framework

This study aimed to investigate the need for study programs to develop the curriculum for international accreditation, such as document preparation of curriculum, learning implementation, assessment, and outcomes of the study programs. The research seeked to present the needs of each study scope from the perspective of stakeholders, who were students, alumni, lecturers, and graduate users, in addition to reviewing the curriculum documents. Sequential exploratory strategy in mixed methods approaches was employed, which was collecting and analyzing qualitative data in the first stage and collecting and analyzing quantitative data in the second stage based on the results of the first stage (Creswell, 2009).

The current research applied CIPP (Context, Input, Process, Product) evaluation model because it was perceived to fit with the needs of decision making and accountability, with four evaluation types covering context, input, process, and product (Stufflebeam, 1971). Furthermore, the Outcomes (O) component was added to complement the Outcome Based Education (OBE) in curriculum development for an international accreditation purpose. The conceptual framework for CIPPO model was used to evaluate the process of developing a study program curriculum by adopting a higher education curriculum cycle. The cycle included 5 stages, (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation (Kementerian Pendidikan dan Kebudayaan, 2020).

Context evaluation aimed to evaluate the analysis, design, and development stages; input evaluation to assess some stages of implementation (human resources, facilities, and supporting resources); process evaluation to assess other stages of implementation (conducting socialization/workshops/guidance for students and lecturers, learning activities); product evaluation to evaluate the product (learning assessment); outcome evaluation to evaluate the responses of alumni and alumni users. The evaluation procedure applied sequence of activities to identify criteria, to set a standard, to collect and synthesize data (Schroter, 2015). In detail, the procedures covered (1) identifying criteria by conducting a study program curriculum development study, (2) setting standards by referring to assessment instruments using Likert scale, (3) collecting data through FGDs, reviewing curriculum documents, and spreading questionnaires to students, and (4) synthesizing by profiling each criterion and drawing an evaluative conclusion.

2.2. Settings

The current research was conducted in the postgraduate program of education management located in East Java. This study program was the first masters' degree program on campus, actively operated in 1999. Currently, it has received an A from BAN-PT, and experienced in foreign student management. The study focused on the curriculum development activities, from the formulation of the study program's vision to the operational learning activities made by the head of the study program, the lecturers, and students, as well as the responses of the alumni and alumni users.

2.3. Participants

The research participants were: the head and secretary of the study program, 48 postgraduate lecturers at the beginning of the Postgraduate curriculum review workshop and 8 home-based lecturers from the study program during the follow-up FGD, and 71 students of semester 2 - 4. Before collecting the data, research instruments were developed by referring to and adopting the description of the higher education curriculum cycle by the Kementerian Pendidikan dan Kebudayaan (2020), and AQAS instruments especially those related to the student learning, teaching, and assessment [ESG 1.3] (AQAS, 2020). The instrument development began with an interview with the head of quality assurance unit of the university to understand the concepts and practices of each accreditation assessment item. After the interview, Forum Group Discussion (FGD) was conducted with the head

of the quality assurance unit (SPM) and the head of the international accreditation division of higher education in Bandung Indonesia, who had succeeded 28 study programs for international accreditation. The results of the FGD were used as the basis for the research instrument development.

2.4. Data Collection

The data were collected through interviews with the head of the study program, related to the formulation of the study program's vision, mission, and objectives. Then, the curriculum documents were examined to obtain an overview of the curriculum development process. After examining the document, an FGD with 48 postgraduate lecturers was made through curriculum review workshops, and followed by 8 home based lecturers, the head and secretary to obtain data on learning experiences and views on the next curriculum improvement. Student responses to the learning implementation were obtained by using a questionnaire through Google Form sent via Whatsapp group to the 2nd, 3rd, and 4th semester students. Besides, this study also reviewed the alumni tracer study report by university.

The research instrument signs followed CIPPO evaluation model, presented in table 1.

Table 1: The assessment signs of study program curriculum development for international accreditation preparation

No.	Component and Indicator
1.	Context evaluation: a. International ideals are reflected in the vision, mission, goals and strategies of the Study Program b. The Programme Learning Outcomes (PLO) of the study program is based on Outcome Based Education (OBE), Indonesian National Qualifications Framework (KKNI), and National Standard-Higher Education (SN-Dikti) c. PLO as a whole includes the component of attitudes, knowledge, general skills, and special skills d. The study materials and learning materials with the breadth and depth of the learning materials are reflected in the courses and the number of credits e. Course organization is reflected in the curriculum structure and is relevant to achieving PLO f. The learning tools completely include Semester Learning Plans (RPS), Task Plans, Evaluation plans, and assessment instruments g. The learning design applies IT technology and Blended Learning
2.	Input evaluation: a. Availability and quality of human resources (lecturers) b. Availability and quality of learning facilities c. Availability and quality of learning sources
3.	Process evaluation: a. The delivery of learning outcomes at the beginning of the lecture by the lecturer b. Encouragement for student activeness in learning c. Encouragement for students to do a research in doing assignments d. The use of modules/teaching materials by the lecturers e. Delivery of research experiences to enrich the materials by the lecturers
4.	Product Evaluation: a. The assessment instrument is relevant to the learning objectives/outcomes b. The score given reflects the mastery of learning achievement c. The assessment is given fairly and openly (there provided a room for complaints)
5.	Outcome evaluation: a. Alumni satisfaction b. User satisfaction

The test result of the questionnaire item validity by using Product Moment formula is presented in table 2.

Table 2: The validity of the questionnaire items

No.	Aspect	Correlations	Predicate
1.	The learning facilities are complete and adequate	0.799	valid
2.	The learning sources are adequate and accessible	0.737	valid
3.	The lecturer delivers the learning outcomes at the beginning of the lecture	0.801	valid
4.	Lecturer encourages students to be active	0.856	valid
5.	Lecturer encourage students to do research in doing assignments	0.759	valid
6.	Lecturer uses their self-written modules/teaching materials	0.808	valid
7.	Lecturer presents research experiences to enrich the material	0.738	valid
8.	The assessment instrument is relevant to the learning objectives/outcomes	0.860	valid
9.	The score given reflects the mastery of learning outcome	0.827	valid
10.	Assessment is given fairly and openly (there provided a room for complaints)	0.747	valid

All the statement items developed in the questionnaire are valid and reliable because they show a positive correlation coefficient score at a significance level below 0.05 with a Cronbach's Alpha coefficient score of 0.959, which means that the instrument is declared reliable.

2.5. Data Analysis

Qualitative data analysis from the results of direct interviews and FGDs was carried out through data condensation, data presentation, and drawing conclusions as well as verification that the data presented reflected the curriculum development pattern for the study program. The research finding validation was performed through triangulation of data collection techniques in the form of reviewing curriculum documents and using questionnaires for students, alumni and graduate users. The final conclusion of each component and indicator evaluated by using modified conclusion criteria of BAN-PT (2019) accreditation assessment in a percentage is presented in table 3.

Table 3: The conclusion criteria for the predicate of the level for improvement and satisfaction needs

No.	Accreditation Score	Percentage Conversion	Predicate Satisfaction Level	Predicate Level of Improvement Needs
1.	361 - 400	90.25 – 100.00	Very Good	Very Low
2.	301 - 360	75.25 – 90.24	Good	Low
3.	200 - 301	50.00 – 72.24	Pretty Good	High
4.	0 - 200	0.00 – 49.99	Poor	Very High

3. Results

3.1. Context Evaluation

The context evaluation suggests that the last sentence of the study program's vision reads international reputation, which indicated ambition to achieve an international recognition. The vision is derived from the formulation of the postgraduate and the university vision which explicitly includes the word "international" in the last sentence of the vision. The study program's vision has been well formulated into mission, curriculum foundation, and educational objectives, written in the curriculum document.

The profile in the curriculum document reads "producing masters who play as lecturers, researchers, consultants, and leaders of educational institutions. This profile is confirmed by the answers of 45 (63%) students from 71 students presented in table 4.

Table 4: The expected career of the study programme alumni

No.	Expected Career	Frequency	Percentage
1.	Lecturer	27	60.00
2.	Education Staffs	4	8.89
3.	Teacher	4	8.89
4.	Manager	3	6.67
5.	Others	3	6.67
6.	Researcher	2	4.44
7.	Education Consultants	2	4.44
8.	Entrepreneur	0	0.00

To achieve the graduate profile, KKNI-based PLO and SN-DIKTI have been arranged. Some of the expected abilities are divided into aspects of attitude and values with 7 sentence formulations, work field abilities with 4 sentence formulations, knowledge that must be mastered with 3-sentence formulations, and managerial abilities in 3 sentence formulations. Furthermore, CPL is developed into 32 formulations including the formulation of aspects of attitude and values as many as 11 sentence formulations, general skills as many as 9 sentence formulations, special skills aspects in 6 sentence formulations, and knowledge aspects in 6 sentence formulations.

The existing PLO is developed into 20 courses divided into 5 subject groups: (1) Basic Competency Course (MKD), (2) Methodological Competency Course (MKM), (3) Main Competency Course (MKU), (4) Supporting Competency Course (MKP), and (5) Final Study Assignment Course (TAS). With 15 required courses and 5 elective courses (minimum of 2 courses should be taken) with 52 credits in total. The depth and breadth of the study materials in the courses can be categorized good, as evidenced in the curriculum structure that has accommodated 5 courses determined by the National Study Program Association.

The organization of the courses in the curriculum structure is grouped into 5 subject groups which indicates that each course group has their own goal to achieve learning outcomes in each aspect of competency as formulated in the PLO. Every subject group aims to provide different competencies while still referring to the students' achievement on graduate learning outcomes. This is to ensure that each formulation of aspects of attitudes and values, work competency, knowledge, managerial skills can be achieved through the courses offered.

Before being implemented in the classroom, each subject in the curriculum structure has developed learning tools in the form of a syllabus or also known as Semester Learning Plan (RPS). Broadly speaking, the syllabus contains the formulation of course learning outcomes (CLO), course objectives (CO), study materials/subject, learning experiences, learning resources, learning assessments and references. However, the formats presented are varied, and the assessment weight has not been included. The learning experience also does not show any formulation of optimal use of information technology-based learning and use of blended learning.

3.2. Input Evaluation

The results of the input evaluation show that the availability of permanent lecturers who hold courses from semesters 1 - 4 are very adequate with very good quality. 36 lecturers with Doctoral education qualifications, with details of 7 professors, 24 head lectors, and 5 lectors. The availability of learning facilities and resources is also very adequate with very good quality. Very good and conducive classrooms, discussion rooms, and library are adequately provided, which is supported by the fact that the university, study program, and library are accredited A.

The input evaluation in terms of the availability and quality of learning resources that can be accessed by the students is very good as students can freely access the facilities both offline and online. The learning resources provided are from reputable international publishers, such as: Taylor and Francis, Link Springer, Emerald Insight, ProQuest, in addition to the research repository, e-theses. They are all freely accessible to the academic community through student or lecturer account.

The results of the student satisfaction survey on the availability and access to utilize learning facilities and resources are presented in table 5.

Table 5: The level of student satisfaction with the learning facilities and resources

No.	Statement	Average	Percentage (%)	Predicate
1.	The learning facilities are complete and adequate	3.69	73.80	Good
2.	The learning resources are easily accessible and very adequate	3.93	78.60	Good
	Average	3.81	76.20	Good

3.3. Process Evaluation

The process evaluation found that the socialization activities with lecturers were made through coordination meetings at the beginning of the semester before the lecture program, and student orientation for new students was carried out at the beginning of lectures. Several activities that support the student' learning process are technical guidance on writing scientific papers, national and international seminars, training on the use of library services, and providing opportunities to participate in scientific work presentations at both national and international levels.

The results of the student satisfaction survey on the teaching and learning process and co-curricular activities are presented in table 6.

Table 6: The level of student satisfaction on the lecturer performance during learning

No.	Statement	Average	Percentage (%)	Predicate
1.	The lecturer conveys learning outcomes at the beginning of the lecture	3.75	75.00	Good
2.	The lecturers encourage students to be active	4.09	81.80	Good
3.	The lecturers encourage students to do a research in doing assignments	3.93	78.60	Good
4.	The lecturers use their own modules/teaching materials	3.69	73.80	Good
5.	The Lecturers present research experiences to enrich the material	3.96	79.20	Good
	Average	3.88	77.68	Good

3.4. Product Evaluation

The results of the student satisfaction survey on the implementation of the learning evaluation are presented in table 7.

Table 7: The level of student satisfaction with the learning assessment by the lecturer

No.	Statement	Average	Percentage (%)	Predicate
1.	The assessment instrument is relevant to the learning objectives/outcomes	3.96	79.20	Good
2.	The score given reflects the fulfilment of learning outcomes	3.96	79.20	Good
3.	The assessment is given fairly and openly (there provided a room for complaints)	3.64	72.80	Good
	Rata-rata	3.85	77.07	Good

3.5. Outcome Evaluation

The results of tracer study on 30 alumni of the study program in 2020 are presented in table 8.

Table 8: The information on the condition of the study program alumni

No.	Component	Result
1.	Average waiting period to get a job	2.5 month
2.	Alumni satisfaction with current job	Satisfied
3.	The institution in which the alumni work	Educational institution
4.	Profession	Educator

The description of the satisfaction level of alumni users with the indicators developed by BAN-PT is presented in table 9.

Table 9: User Satisfaction Level on the Alumni Performance

No.	Satisfaction Indicator	Score		Predicate
		Scale 5	Percentage	
1.	Ethical & Moral Integrity	4.30	86.00	Good
2.	Competence	4.50	90.00	Good
3.	Foreign Language Competence	4.30	86.00	Good
4.	Use of Technology	4.30	86.00	Good
5.	Communication Competence	4.60	92.00	Very Good
6.	Teamwork	4.50	90.00	Good
7.	Personal Development	4.50	90.00	Good
8.	Leadership	4.50	90.00	Good
9.	Scientific Insight	4.50	90.00	Good
	Average	4.44	88.80	Good

4. Discussion

4.1. Context Evaluation

The results of the context evaluation show that the vision of the study program has been well described because it refers to the formulation of the postgraduate and university vision, by including the word international in the vision. The vision of the study program is outlined in the mission, curriculum foundation, educational objectives, and in the curriculum document. Therefore, there has been a desire or intention of the study program to standardize internationally. It is fundamental as the vision becomes the direction for the operationalization practices of the program. It strengthens the research findings that the promotion strategy to gain international trust is to formulate a strong vision, international accreditation for the study program (Rosyidah et al., 2020). Organizational performance is strongly determined by a strategy that includes the vision, mission and goals of the organization (AIDhaheri et al., 2020). Higher education's commitment towards internationalization can be seen from the formulation of vision and mission because they are the spirit of universities in the activities (Nulhaqim et al., 2016.)

A vision is a brief articulation of what the college strives for and what its ultimate goal is. It refers to the wishes or aspirations of the college in the future (Qadir et al., 2020). The word "international" in the university vision as a declaration of higher education orientation to be a world-class university (Binangkit and Siregar, 2020). The university vision and mission and the commitment of the rector/college leader to make it happen are prerequisites (Wahidmurni et al., 2019). The international vision implies for the study program's efforts to produce graduates equipped with international competitiveness.

The profiles of the study program graduates are lecturers, consultants, researchers and institutional leaders, confirmed by the results of a survey towards students that most of them aspire to become lecturers. To achieve the graduate profile, KKNI and SN-DIKTI -based PLO has been formulated, accommodating OBE as the first step in the curriculum planning. It is evidenced by the formulation of competencies expected to be mastered by graduates, which include aspect of attitudes and values, aspect of competence in the workplace, and aspect of management.

The four competency aspects are the basis for the development of the next curriculum. It is relevant to the findings of previous research that in the OBE system, learning outcomes are firstly set, then the learning methods and learning evaluations were adjusted (Davis, 2003). According to OBE paradigm, instructional practices and assessments are explicitly designed to ensure the achievement of predetermined learning outcomes.

PLO has been developed in groups of subjects with a good depth and breadth of study materials, even the study program has accommodated all courses that have been determined by the study program association. However, the number of credits of the learning load exceeds the minimum standard of learning load by the National Higher Education Standards for Masters' degree programs, which is 36 credits (Kementerian Pendidikan dan Kebudayaan, 2020). Therefore, the learning load exceeds by 16 credits. For this reason, it is necessary to review the curriculum to adjust the learning load that no more overload of credit. Or, even an excess of learning load is unavoidable, at least it is in small number. This is relevant to the recommendation in the FGD with the lecturers, who perceive to provide too many credits, so it needs a review to ensure that overlapping in teaching materials does not occur anymore.

The Head of the Quality Assurance Unit and the Head of the International Accreditation Division of State Universities in Bandung-Indonesia suggests that PLO formulation should be simplified to around 10-11 formula, mainly on the aspects of knowledge/skills/and competencies. Besides, PLO formulation must be linked to the evaluation including the questions used as well as the learning module. For PLO, the attitude aspect becomes added value/human-ethic value. The number of PLO formulations is related to the number of formulations that must be included in the study material, and it implies on the measurement certainty when the learning evaluation is made. This is relevant to the findings of a previous study which emphasizes that CLO-PLO mapping and achievement quantification are integral parts of OBE, and they help in continuous quality improvement, which serves as feedback for the OBE loop (Reddy et al., 2021).

Curriculum planning is an important first step to implement OBE. It involves (1) writing CLO, (2) mapping CLO to PLO, and (3) planning assessment to measure performance in CLO. Curriculum planners also need to design strategies to collect CLO performance data and use it to measure performance at the PLO level (Qadir, et al. 2020). The OBE curriculum requires determining the LO of learning outcomes before teaching, and it emphasizes the introduction of control flows across course content, instructional strategies, learning experiences, and evaluation methods (Gurukkal, 2020). Writing CLO for courses is important in OBE. It is related to the competencies that must be achieved by successful graduates. There must be a proper correlation between CLO and PLO or student learning outcomes. Therefore the CLO statement and its mapping with PLO should be checked. The survey results show that 53% respondents can write CLO and map it with PLO perfectly. The rest can do so moderately and sometimes need a support (Jadhav et al., 2020).

Each course has developed a set of RPS, yet the format has not been standardized in the sense that it is written in defferent forms. However, the minimum components in the RPS, which are CLO, CO formulations, guidelines for implementing learning activities, and learning assessments are available and complete. The weakness lies in the problem of weighting each CO to measure the level of mastery of each CLO during the mid-semester and end-semester examination. In preparing RPS, the learning experience should focus on the student learning outcomes, considering: what students should understand or do at the end of the lesson; what activities they should perform in the learning activities; and how the lecturers ensure that they have mastered the learning objectives. For this reason, there must be a harmony between learning outcomes, teaching and learning activities, and assessment (Tam, 2014).

The formulation of learning implementation is still designed conventionally, by utilizing IT in a simple way without blended learning. Therefore, it needs to increase the use of IT in learning and to design blended learning in the following semesters. Covid-19 pandemic teaches the importance of online learning. It is a good capital to make improvements in the next learning activity. The internationalization of universities or study programs requires university support in developing WEB and ICT programs to support online learning needs, so bilingual WEB must be managed by professionals with a very adequate size (Mutiarin, et al., 2019).

4.2. Input Evaluation

The input evaluation in terms of availability and quality of human resources, especially lecturers, is going very adequate. In terms of quantity and quality, it is appropriate even better in terms of requirements. According to BAN-PT assessment, it is very good with a score of 4. If the number of permanent lecturers with respective areas of expertise in accordance with the core competencies of the study program accredited by more than 6 people (BAN PT, 2019). The quality of excellent lecturers is an important factor for the quality dimension of higher education. It is relevant to the finding of Simangunsong (2019) that lecturer quality is one of the quality dimensions of higher education from the perspective of stakeholders.

The Input evaluation in terms of availability and quality of learning facilities and learning resources belongs to very good. The accreditation scores of the study program, institution, and library are all A (very good). Because in terms of physic and quality, the learning facilities are very good, and the quality of the available learning resources is also very good with very adequate number. However, the survey results show that student satisfaction with the availability and accessibility of the learning facilities is only good/satisfactory, which means the need for service improvement and accessibility to the learning facilities by students. The adoption of e-learning facilities by students is determined by technology-related factors, such as: ease of use, speed, and service delivery, in addition to organizational-related factors (training support and diversity), environmental-related factors (user attitudes) and impact-related factors (learning experience, skills development, academic performance, and level of engagement) (Eze et al., 2020). Thus, further analysis on which service factors need to be improved is needed to increase the student satisfaction.

In addition, the level of student satisfaction in the use and access to the learning resources is also in the good category that improvement is needed. Regarding the use of learning resources, Mei (2020) suggests that the implementation of learning in OBE curriculum does not only emphasize on blended learning environment, through integration of online and offline activity and flipped classrooms, but also needs to expand learning channels, stimulate interest in learning, and provide many learning resources for students based on the curriculum content to support autonomous learning. OBE is out-and-out learner-centric, in the sense that it helps students conduct self-assessments simultaneously to determine their progress in achieving the postulated results. The appropriate learning resource to facilitate students to know their learning progress is module (Gurukkal, 2020).

Module as a learning feature in OBE curriculum, which needs to be developed by the lecturers to be a learning source for students. Lecturers cannot maximally develop research-based learning modules for learning resources. Module should be developed based on the results of research based on the expertise of the lecturer. (Mei, 2020). Universities that are committed to the internationalization of campuses place research as an important factor because the main product of scientific development is a research, and the quality of universities is also determined through their research products. Therefore, the study program is suggested to develop the learning modules based on research results to prepare for international accreditation (Nulhaqim et al., 2016).

4.3. Process Evaluation

The evaluation process in terms of the performance the lecturers during the learning process is perceived to be good, so the level of need for performance improvement is low. The performance improvement is related to pedagogic aspects with the use of information technology in learning, the preparation of research-based learning modules which are very much needed in OBE-based learning. According to Mutiarin et al. (2019), improving the lecturer quality is very much needed for an international accreditation. Lecturers' competencies need to be constantly updated to adapt with the evolving learning theory and practices.

The survey result on the learning performance is prominent for the improvement of continuous learning programs, especially when the study program wants to always improve in providing educational services. It is also related to the assessment by both national and international accreditation agencies. Regarding international accreditation, a research by Qadir et al. (2020) voices that OBE movement, as a whole, helps to improve educational standards and outcomes by ensuring proper curriculum planning and assessment, and there found alignment of program

objectives and desired outcomes. Therefore, performance assessment on the learning implementation is important to do to ensure appropriate execution according to the learning objectives.

In terms of learning methods, education under OBE requires a diversification of learning methods. With technical characteristics of "Internet +" era, it has facilitated education in an open classroom, which is conducive to the openness of time, space and content. Student learning time is not only limited in the classroom; learning content is not limited to teaching materials. Rich extra-curricular additional knowledge allows students to consolidate knowledge in the classroom while helping to foster independent learning competence (Mei, 2020). Such conditions could run well if the lecturer always up-to-date in pedagogical competence.

4.4. Product Evaluation

The student satisfaction with the teaching performance of the lecturers in the learning assessment activities is in a good category. Therefore, the improvement for the learning assessment aspect towards international accreditation is low, especially in terms of giving loads to each CO of assessment instrument. The development of learning evaluation materials to identify student and graduate competencies is the most problematic issue in the assessment of educational activities in international accreditation (Efremova & Tabishev, 2020). Improvements to the assessment system must involve the management of faculties and study programs because the effective learning assessment in OBE employs an automated system. The system begins by entering class schedules, teaching plans, assessment rubrics and assessment surveys, so the study program and faculty management can monitor the effectiveness of learning (Gnanapriya & Savitha, 2018).

Learning evaluation in OBE uses multi-dimensional evaluation system to continuously monitor, evaluate, and provide feedback to students. Thus, it requires the involvement of the faculty management to monitor the learning evaluation (Mei, 2020). In order for the learning evaluation to run effectively minimum overhead cost, the CLO into PEO mapping should be maximum of three places, even (if possible) one place in PEO (Qadir et al., 2020).

In practice, learning assessment still focuses on the cognitive and psychomotor domains. This is also reflected in the assessment format in the campus academic system. It is in line with the previous finding that lecturers focus on assessing the aspect of performance, so assessment on the aspect of attitudes/values is suggested (Domino & Eva, 2019). Each domain of learning outcomes is the focus of attention in international accreditation, which causes OBE to be the basis. According to Qadir et al. (2020), to ensure that all domains of learning outcomes are assessed, when developing performance indicators which are the most critical part in developing an assessment instrument, two important things must be considered: the content of the subject and action verbs, such as list, analyze, apply; the writing of these action verbs must be commensurate with the planned level of outcome. This is relevant to the analysis that the question for learning assessment when the curriculum is practiced under OBE often fails to achieve the desired balance even at the level of course objectives. Therefore, an lecturer competence improvement program for OBE-based learning assessment is highly recommended (Gupta & Dutta, 2020). The improvement supports the results of a survey on OBE-based learning assessment that there is a need for improvement in assessment and evaluation strategies because most respondents do not know various assessment instruments that can be used for assessing the students' learning outcomes (Jadhav et al., 2020).

4.5. Outcomes Evaluation

The evaluation results show that the average waiting period for alumni to get a job is 2.5 months, which indicates a very good predicate because it is less than 3 months (BAN-PT, 2019). Most of the alumni work in educational institutions as educators, which is relevant to the graduate profile released by the study program. Alumni satisfaction with the work they are currently engaged in is perceived to be good, so there are still several aspects that need to be improved in the development of the study program curriculum that their satisfaction at work improves to be very good. Satisfaction is one of the determining variables to explain alumni loyalty to higher education (Pedro & Andraz, 2021). User loyalty can grow through an increase in user satisfaction (Twum et al., 2020).

The ability of universities to develop student career capabilities through knowledge enrichment is a determining variable of alumni satisfaction and loyalty (Rafik & Priyono, 2018). The key attributes that influence alumni satisfaction in educational programs are subject attributes, system attributes, interactive attributes and teacher/lecturer attributes. The attribute of the teacher/lecturer becomes the attribute that has the highest influence, followed by the attribute of the course (Daultani et al., 2021). Therefore, it needs for improvement in the input, process and product components.

The user satisfaction with the performance of alumni shows a good/satisfactory level. Of the nine indicators of user satisfaction, eight indicators of perceived satisfaction are good, and only one indicator of perceived performance satisfaction is very good. Thus, the study program needs to develop programs that can equip alumni to have the required competencies because the satisfaction of alumni users is the determining factor of the study program success. The level of end-user satisfaction is an undeniable prerequisite for developers to redesign devices to meet the emerging needs of their users (Pillai et al., 2021).

Graduate user satisfaction can increase through information quality improvement which is relevant, accurate, timely, and trustworthy. The information provided is related to the graduate qualifications and competencies (Karoba et al., 2020). The results of the tracer study show that the things considered in curriculum reconstruction activities are alignment of study and work fields, learning activities that are relevant to the work needs, assessment of learning, condition of facilities and infrastructure, and courses that are relevant to the user demand (Heriyadi et al., 2021). Thus, the result of the tracer study becomes very important as a feedback to improve the education system and sustainable learning, especially in the development of students' hard skills, soft skills, and life skills.

5. Conclusion

Context evaluation showed that the study program curriculum documents had been developed according to OBE curriculum development pattern, making learning outcomes as the starting point. It is relevant to the vision of the study program which explicitly includes the word international, outlining the ideals of international recognition. One of the ways is to carry out international accreditation which has made OBE the basis for curriculum development. The aspects of learning outcomes are attitudes, knowledge, and skills described coherently from PLO, CLO, CO developed under the graduate profiles. Such conditions make it very possible for study programs to take a part in international accreditation programs by making adjustments in several fields, for example reviewing study materials from each course and ensuring that the domain of learning outcomes is assessed thoroughly along with valid assessment instruments and rubrics.

The input evaluation denoted that the availability and quality of lecturers were very good, and the availability of learning facilities and resources was very adequate. Only their utilization needed improvement. The adoption of online learning facilities and resources could be improved by providing easy accessibility, speed and service delivery, and increasing skills in accessing learning resources. In addition, it needed to expand learning channels, stimulate interest in learning, and provide many learning resources based on the curriculum content to encourage independent learning.

The process evaluation showed that the learning implementation of the lecturers was perceived to be good, so the need for improving lecturer performance only lay in the use of information technology media and the preparation of research-based learning modules. Several components of OBE learning needs to be prepared and performed related to the use of various learning resources, especially lecturer research-based learning modules, the use of a blended learning environment through an integration of online and offline activity designs, and implementation of flipped classrooms. It requires improving the pedagogic competence of lecturers to develop OBE-based learning.

Product evaluation proved that the learning assessment given by the lecturer was good, so it only needed for improving the assessment performance in the aspect of attitude. The components which need to be adjusted are giving load to each CO on the assessment instrument for all courses, ensuring PLO for the attitude aspect in the assessment process using the attitude assessment rubric, such as involving postgraduate management to monitor the assessments made by the lecturer by using an online application.

The outcome evaluation suggested that the satisfaction level of alumni and users was in a good category, so an increase in their satisfaction was needed because maximum satisfaction would induce alumni and users to be highly loyal to the study program institution. The increase in satisfaction could be brought in through continuous improvement in context, inputs, processes, and products as the main services of the study program.

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