A MEASUREMENT MODEL FOR ACCREDITATION PROCESS OF GRADUATE SCHOOLS IN INDONESIA WITH THE ANALYTIC HIERARCHY PROCESS

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Keywords: accreditation process, graduate school

Summary : *Education sector in Indonesia has been facing great challenge, indicated by the country's very low position in the ranking of workforce competitiveness among nations in the world. The Department of Education has established the National Accreditation Body (abbreviated as BAN) as one of the way to improve the quality of both outcome and process of higher education in Indonesia. BAN has established a portefolio rating model, specifying eight key components, i.e., Description of the vision, mission, and objectives of the program; Program management; Curriculum and learning process; Human resource and its development; Students and their guidance; Facility and its development; Evaluation system; and Financing. BAN is committed to develop a system which shifts from a mostly input based normative evaluation system to a more descriptive system that requires self-evaluation by the administrators of each program. A rating model for graduate schools in Indonesia is proposed using the Analytic Hierarchy Process (AHP). The model uses the AHP absolute measurement approach, starting with the goal at the top level of the hierarchy and the eight components at the second level. Performance indicators for each of the eight components will be identified and located under their respected component, followed by the time frame of past performance, current activities, and future plans. A set of intensity ratings is located at the bottom of the hierarchy. While definition of intensity ratings for each indicator is instrumental in this absolute measurement system, only partial definitions can be included here.*

1. Introduction

Education sector in Indonesia has been facing a great challenge, of which higher education in particular has been the target of heavy criticism for the poor quality of their graduates as judged by the user market. The deprived education system in Indonesia is indicated by the country's relative low position in the ranking of workforce competitiveness among nations in the world. The Department of Education of Indonesia established the National Accreditation Body (abbreviated as BAN) as a means to improve the higher education quality of both outcome and process. It is very encouraging to observe that the BAN has moved from using a mostly input based normative quantitative evaluation system to a more descriptive qualitative portefolio system. The Directorate General of Higher Education (abbreviated in Indonesian as DIKTI) has been making the effort to develop a new paradigm that is directed toward relevance, academic atmosphere, institutional management, sustainability, and efficiency (abbreviated as RAISE). This new system requires a comprehensive self assessment of a wide variety of components, each involves statement of objectives, description of actions to be done and have been done, and results to date. With this complex system, it is important to use a scientific measurement theory to ensure the accountability of the final judgment of whether or not a graduate school should be accredited or not accredited. Graduate schools were subjected to this new accreditation system for the first time, which result was just recently announced. The purpose of this paper is to propose an AHP measurement model for the accreditation process of graduate schools in Indonesia, using the key components and their descriptions that the BAN uses as the evaluation criteria. The model will be constructed using the AHP absolute measurement approach. While definition of intensity ratings for each indicator is instrumental in

this absolute measurement system, it will not be possible to be fully done here. Hence, only partial definitions will be included in the paper. It is our intention to propose its use as a formal model for BAN. In this case, what we have here will need to be improved by collaborating with BAN officials and other education experts. It is expected that there will be significant change since BAN is in the process of evaluating its system for improvement, based on the experience of the previous implementation.

2. The Portefolio System

Portefolio system is an approach to obtain qualitative information used by the accreditation system that is oriented towards:
1. Quality.
2. Resource availability and its usefulness in improving learning process and student performance.
3. Aligning learning results to the vision and mission of the education institution.
4. Research and services.
5. Development of performance indicators to measure progress, both quantitative and qualitative.
6. Benchmarking to other institution, both national and international.

The portefolio system has the following characteristics:

1. It uses qualitative assessment, based on the assumption that quality assurance of a graduate program requires in-depth, comprehensive, and holistic feedback. Assessment is not a one-time picture only.
2. How well program plan is implemented and how well the components being evaluated interact with its mission and objectives determine the success of a graduate program.
3. Accreditation of a graduate program involves in-depth and overall assessment concerning the dynamics in the environment and performance of the program with its supporting resources. It also involves control and development to assure quality, efficiency, and relevance of the graduate program.

BAN has established a portefolio rating model using eight key components, i.e.: Description of the vision, mission, and objectives of the program; Program management; Curriculum and education process; Human resource and its development; Students and their guidance; Facility and its development; Evaluation system; and Financing. A graduate program needs to present its portefolio, a self-description and internal evaluation document that are subject to external evaluation and validation.

3. The Proposed Model

The AHP model starts with the goal at the top level of the hierarchy and the eight components of the goal (objectives) at the second level. Sub-objectives and performance indicators for each sub-objective are identified and located in the third and fourth level of the hierarchy respectively. A graduate program will be assessed on how well it strives for the objectives over time, hence time frame elements of "past performance", "present activities", and "future plans" are included and located in the fifth level. This is an absolute measurement model, so a set of intensities of "poor", "adequate", and "excellent" is located at the bottom of the hierarchy. The structure for the first five levels of the accreditation model is presented in the table below. The intensity rating elements (level 6) are not shown here. Notice that not all performance indicators can be evaluated based on the three time frames.

GOAL	OBJECTIVES	SUB-OBJECTIVES	PERFORMANCE INDICATORS	TIME FRAME
Rating of Graduate Programs for National Accreditation (1.000)	Description of program direction and objectives (0.146)	Identity (0,019)	Completeness	Present activities
		Vision (0,029)	Long-term aims for excellence	
		Mission (0,024)	Effective guide to achieve vision	
		Objectives (0,042)	SMART	
		Characteristic of graduates (0,012)		
		Standards (0,028)	Input	
			Process	
			Environment	
	Management of the program (0.133)	Written guidelines for program management (0.028)	Curriculum and teaching method	Past performance

Present activities

Future plan |
			Management staff	
			Student administration	
			Equipment's and facilities	
			Funding	
		Organization policy (0.024)	Requirements for enrolment	
			Academic calendar	
			Rules of conduct	
			Evaluation, Requirements for graduation	
			Faculty and facility	
			Education fee	
		Organization structure (0,015)	Institution	
			Program of study	
		Human resource capability (0,025)	Competence	
			Commitment	
		Program development plan (0,021)	Use of past experience	
			Reference to vision and objectives	
		Management Report (0,020)	Accuracy	
			Completeness	
			Follow up control	
	Curriculum and learning process (0.160)	Research or professional activities (0,040)	Type of activities	
			Manpower support	
			Financial support	
			Facility support	
			Broad	Past

		Complexity of knowledge (0,038)	Depth	performance
		Structure of curriculum (0,032)	Knowledge	Present activities
			Skill	
		Syllabi (0,025)	Relevance	
			Focus on learning	Future plan
		Delivery (0,025)	Lecturing	
			Technical skills	
			Experiential learning	
	Manpower availability and development (0.168)	Academic staff (0,064)	Formal education	Past performance
			Experiences	
			Development policies	Present activities
		Lecture development and availability (0,054)	Area/scope	
			Formal education	Future plan
			Non formal education	
		Administration staff capability and availability (0,025)	Educational background	
			Skills experience	
			Program development	
		Expertise (0,025)	IT	
			Librarian	
	Students performance and their guidance (0.187)	Standards of graduate performance (0,026)		Past and present performance
		Selection system (0,024)	Procedures	Future plan
			Instruments	
		Learning and teaching process (0,036)		
		Quality of lecture and advisory (0,044)	Knowledge/skill and its transfer	
		Material support (0,036)		
		Non-academic service support (0,021)		
	Facilities and their developments (0,056)	Building facilities (0,006)		Past performance
		Class room facilities (0,007)		

		Library completeness (0,008)		Present activities
		Laboratory facilities (0,008)		Future plan
		Equipment's support (0,007)		
		Computers/techno logy support (0,008)		
		Other supporting (0,004) facilities		
	Evaluation system (0,070)	Program (process & procedure of evaluation) (0,17)	Achievement	
			External contribution	
			Internal contribution	Past performance
		Process (implementation of evaluation) (0,21)	Effectiveness	
			Efficiency	Present activities
		Output (feed back system) (0,22)	Timeliness	
			Discipline	Future plan
			Academic performance	
			Record management	
		Mechanism and procedure (0,10)	Design	
			Implementation	
	Financing (0.070)	Budgeting plan (0,29)		Past performance
		Source of funds (0,29)		
		Financial report (0,22)	Accuracy	Present activities
			Completeness	Future plan
			Follow up control	

4. Definition of Intensity Ratings

The set of intensity ratings of "poor", "adequate", and "excellent" located at the bottom of the hierarchy must be defined to reduce the subjectivity of the judgments. The following is an example of the definition for the intensities to judge the quality of the sub-objective of Academic Lecturing and Advisory to achieve the goal of Student Performance and Their Guidance. This is selected because it is the most important objective and sub-objective. Notice that there are only two time frames used.

SUB - OBJECTIVES	TIME FRAME	INTENSITY RATING	DEFINITION
Quality of lecture and advisory	Past and present performance	Poor	• No feedback system or • On the average, the majority of students stated that they are not satisfied with the quality of faculty members' knowledge and ability to deliver.
		Adequate	On the average, the majority of students stated that they are satisfied with the quality of faculty members' knowledge but not on their ability to deliver.
		Excellent	On the average, the majority of students are satisfied with both the qualities of faculty members' knowledge and their ability to deliver.
	Future plans	Poor	No plan to improve quality of lecture and advisory.
		Adequate	There is a plan to improve quality of lecture and advisory, but not part of strategic plan.
		Excellent	There is a plan to improve quality of lecture and advisory as part of strategic plan. Current activities indicate implementation of the plan.

5. Evaluation Process

Assessment for accreditation begins with a participating Graduate School submits its Portefolio report to the BAN. The report must include all the proof documents in detail and an executive summary. The practice of BAN at the moment is to allow participants to add materials during their preliminary evaluation. A small team consists of qualified representatives from leading graduate schools evaluates the report and provide initial judgment regarding the accreditation score of the school.

Without this AHP measurement system, the result of team evaluation would be highly subjective. We propose that BAN would allow the participating schools to submit their portefolio with their self-assessment presented using the model. The small team should present their preliminary result in the form of a set of rating judgments regarding each and every performance indicator. The AHP model would provide preliminary synthesized score for each school. At this stage, the team would also indicate any indicator that requires clarification or proof. This means that the rating provided would be subject to revision after the next stage of visitation.

The small team of BAN would visit the graduate school for clarification and confirmation of the preliminary result. This opportunity has been used by the team to communicate with faculty members and students for their direct information from their parts. The team would then revise their judgments based on the result of the visit,

and the AHP model would again, synthesize the judgments and provide new scores. This should be the final accreditation score for the schools, with its corresponding classification of the accreditation status.

6. Requirement for Improvement and Follow up by BAN

The model proposed here needs to be revised and officially approved by BAN. Although BAN is an independent institution, it may want to refer to relevant government regulations. BAN would also need to set a standard for classifying schools based on the scores as "Excellent", "Learning", or "Not Accredited". One needs to keep in mind that this model only concerns with the quality of graduate schools, regardless of the discipline. This means that another assessment system is required, developed from the perspective of each discipline. This needs to be done by the respective academic or professional associations.

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