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Menyatakan bahwa laporan tersebut layak diterima sebagai laporan penelitian.

Demikian pernyataan ini dibuat untuk dapat dipergunakan seperlunya.

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Self-Assessment of Physics Education Study Program
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Introduction

Self-evaluation - sometimes called self-study, self-assessment, departmental review (these terms will be used interchangeably in this guide) - is becoming a feature of academic life in higher education institutions in many countries. Self-evaluation provides systematic feedback to an institution on how it is doing. It is a process of diagnosis and reflection that leads to action. And the more the process is planned and internalized, the more likely that the institution will act on the results. Planned, systematic self-evaluation is a self-strengthening process – it builds muscles for reflection and learning. And the more you reflect and learn and then act on your learning, the better you do it next time. Self-evaluation creates a habit for continuous improvement.

Self-evaluation is sometimes an external requirement of a national quality agency. Other times, it is an initiative taken within a higher education institution in order to support development and planning or to deal with perceived problems. Whatever the reasons for undertaking self-evaluation, it is a process which requires collective judgments about academic work. It also requires the collection of much information, analysis and debate. Moreover, it is generally accepted that the self-evaluation phase plays a fundamental role in developing quality within a higher education context.

The main purpose of the self-assessment process is to help higher education institutions ensure that they meet established standards of quality and that they continually evaluate the extent to which they meet educational quality goals. From this self-assessment will come recommendations for improvements or enhancements to policies, processes, programs, services, facilities, and human resources.Self-study is at the heart of the accreditation process. As mentioned before, effective self-assessment serves both internal and external purposes. It is concerned with quality assurance and encourages institutional improvement through rigorous self-analysis. Self-study is more than a document that addresses in depth the various Standards for Accreditation. It is an intensive endeavor involving individuals throughout the institution of higher education in a process of self-examination aimed at institutional improvement.

The self-assessment should not be viewed as an isolated phenomenon in which an institution periodically engages. Rather, if self-assessment is to be valuable, it should be an integral part of the institution's ongoing planning and evaluation efforts. Incorporating self-assessment into the planning process serves the institution in its continuing search for better ways of achieving its objectives. The self-assessment process necessitates thinking about the context in which the institution is operating and in what ways it is affected by its external environment. In addition, higher education institutions have to secure the following necessary conditions for self-evaluation to succeed:

- Adequate Resources: The institution must provide adequate resources including working time and space for those involved in the process, information, and the technology needed to support data gathering and report preparation.

- A safe and non-judgmental environment: Successful self-evaluation requires a safe climate characterized by respect and broad communication. The process requires a widely held understanding of institutional activities and priorities as well as a commitment to the attainment of measurable objectives.

The resulting report from a self-assessment process should present a clear, concise and accurate picture of the institution as a dynamic entity with a sense of its history, an understanding of its present, and a vision of its future. The self-study should demonstrate the institution's capacity for reflective self-examination as a means for improvement. Generally, the self-assessment process is seen as a necessary first step towards an accreditation journey.

Limitation dan Purposes of the Self-Assessment

As self-study is at the heart of the accreditation process, the current study doesn't focus to all dimensions needed for the accreditation process. The study focuses on the attempt of Program Studi Pendididkan Fisika Fakultas Keguruan dan Ilmu Pendidikan Universitas Terbuka (the physics education study program in the Faculty of Education of Universitas Terbuka, PFIS FKIP-UT) to assess the following issues/components in views of the need of curriculum to adapt to the requirement of Indonesian Qualification Framework (IQF/SKKNI) recently socialized by the ministry of education.

- **Mission, Vision, and Values** – review the organization's guiding principles as a useful reference point for planning, especially when determining how to allocate resources and measure achievements.
- **Collaborators and Beneficiaries** – identify critical stakeholders, with particular attention to their expectations for the plan's development and implementation.
- **Environmental Scan** – examine cultural issues, resource concerns, and other factors that may impinge on the planning process.
- **Goals, Areas Evaluated, Standards, Strategies and Action Plans -** identify PFIS FKIP-UT's aspirations in tangible, achievable, and measurable terms. The self-evaluation report gives descriptive answers and an analysis based on points of reference (indicators) of each standard. PFIS FKIP-UT will present its reasoned opinion on whether the standards have been met for each area. Next, goals are translated into a series of concrete strategies and activities with appropriate timelines, then describe goals and strategies in a manner that is comprehensive, yet easily understood.
- **Outcomes and Achievements** – monitoring progress and, most importantly, evaluating outcomes.

Methodology

Expectations for Self-Assessment

The self-assessment efforts exemplify the following general principles. In essence, self-assessment:

- Focuses on the institution as a whole. As mentioned before, self-assessment is generally seen as a necessary first step towards accreditation; and for accredited institutions, by addressing in this process, specific criteria for accreditation, the institution will gain

reaffirmation of its accreditation. Due to the emphasis on institutional not program-specific, the accreditation is for the entire institution rather than specific departments, programs, locations, or means of instruction. However, evaluating an institution in terms of accreditation standards requires that all of the institution's component parts be examined and that all locations and modes of offering its academic program be included. Ultimately, the information gathered through evaluation of each part must be used to formulate an evaluation of the institution as a whole.

- Appraises and assesses institutional effectiveness. While a self-assessment report provides a clear description of an institution's programs, resources, and operations, it also analyzes and determines how well the institution is functioning and the degree to which the institution is meeting its objectives, as well as setting forth the institution's commitments for improvement. By identifying its strengths and those areas in need of.
- Illustrates improvement along with plans for the future. The institution demonstrates the capacity to continue to meet its objectives. Institutional improvement should always be a goal of the process.
- Results in an unbiased and critical self-examination. The key objective of self-evaluation is to evaluate the higher education institution's effectiveness in achieving its mission and in striving towards continuous improvement in quality. The institution will need to:
  a. Ask hard questions.
  b. Identify key strengths and weaknesses.
  c. Evaluate the adequacy of resources and identify key limitations.
  d. Arrive at a clear understanding of the distance to be covered in order to achieve its strategic quality objectives.
- Contributes to a better understanding of the nature of quality in higher education. The self-evaluation process should result in detailed discussions within the institution about the nature of quality in a higher education context. This will support:
  a. Continuous quality improvement within the institution.
  b. Greater understanding of the issues surrounding quality in higher education.

Thus, through self-assessment, the institution demonstrates that it is using information gathered from its evaluative efforts to enhance its ability to meet its goals and fulfill its mission.

Self-Evaluation Process

The self-evaluation process should be integrated into the overall concept of improving quality so as not to overburden the institution. A well-organized and efficient self evaluation should link ongoing processes in strategic management, quality management and teaching management to the process leading ultimately to accreditation. A self-evaluation process must be prospective and well-structured if the institution is to gain the maximum benefit from the effort involved. Important stages in the self-evaluation process include:

- Selecting the type of self-evaluation model (described briefly in the next section) that will be most useful to the institution in supporting and promoting its particular goals and priorities.
- Establishing and organizing the required committees and campus-wide participation for effective involvement of the entire institutional community.
- Implementing the process.

- Writing a report summarizing the institution's conclusions and recommendations.
- Developing a strategic quality plan to sustain strengths, overcome problems/weaknesses, and address growth areas.
- Institutions interested in initial/continued accreditation: Hosting an evaluation team of peers who review the institution's self-study in the context of the institution's mission.
- Responding to the report of the evaluation team.
- Receiving the accreditation body's decision regarding initial or continued accreditation.

Self-Evaluation Model

There are three major models for self-evaluation. These are the comprehensive model (including a variation involving special emphases), the selected topics model, and the collaborative model. Within these broad models, there are many possible approaches to self-evaluation. This flexibility recognizes the differences in mission, purpose, internal conditions, needs, and external influences at each higher education institution.

The basic comprehensive model is actually a comprehensive self-evaluation that enables an institution of higher education to appraise every aspect of its programs and services, governing and supporting structures, resources, and educational outcomes in relation to the institution's mission and goals. Its variation is the comprehensive with emphasis model. The latter is particularly useful for an institution wishing to give special attention at the outset to selected issues that affect it. Next, the selected topics model allows an already accredited institution to devote concentrated attention to selected issues, without having to provide comprehensive analysis of institutional programs and services and without having to address all accreditation standards within the self-evaluation report. Lastly, the collaborative model refers to the fact that almost all institutions of higher education are subject to review and oversight by multiple agencies or organizations. Some institutions find it helpful to coordinate one or more of these reviews with their self-evaluation in order to minimize duplication of effort and to maximize institutional benefit. The collaborative review is a cooperative review process in which an accredited institution invites institutional, specialized, or professional accrediting agencies, government agencies, or other organizations to join in a review of the institution.

Based on the rationale mentioned earlier, the current study choose the selected topics model for the study focus only on assessing the followings in views of the need of curriculum to adapt to the requirement of IQF recently socialized by the joint work of several ministries. The term 'selected' also applies to the fact that not all aspects likely required for an accredations is studied.

Steps of Self-Evaluation Process

The following are are steps made with a view to making the self-evaluation run as smoothly as possible:

Establishing Self-Evaluation Group

Self-evaluation provides a special opportunity for each institution to reach out to all of its

constituents. A broad cross-section of an institution's constituencies might include, for example, faculty, students, trustees, administrators, alumni, parents, employers, and legislative representatives. Such participation is essential because each institution's decision making process can be enriched if it incorporates a wide range of diverse perspectives, ideas, and judgments. Moreover, the institution community will be more prepared to implement any resulting plans. Accordingly, the institution should appoint a chairman (sometimes called project leader) and a self-evaluation committee (sometimes called steering committee) to manage the process and draft the report. Representation on the committee is also a key issue, and should include representatives from key stakeholders groups. It is essential that there be adequate faculty involvement in the self-evaluation process.

The self-evaluation committee is responsible for providing leadership to the entire self-evaluation process. This includes determining the key issues for self-evaluation, recommending a self-evaluation model that would best reflect those issues, developing a self-evaluation design, establishing and charging subcommittees and coordinating their work on the various issues to be studied, ensuring that the timetable is implemented as planned, assuring communication within the institution about the self-evaluation process, and overseeing the completion of the final self-evaluation report and any other documents relevant to the self-evaluation process.

Communication

At an early stage, the self evaluation committee provides a full explanation within the institution about the aims of the self-evaluation process. It makes sure that its methodologies and its own role in the process are understood and accepted. Administrators, academic staff and students is informed about and benefit from a full opportunity to participate in the self-evaluation process. Effective communication with these parties is maintained throughout the process.The campus community are given opportunities at various points in the process to learn about and respond to self-evaluation issues and approaches and to review the self-evaluation in draft. Use of electronic posting of documents and communication via e-mail facilitate and enhance all these processes.

Methodology

Self-evaluation is conducted in two semester to complete. In view of this, the comittee draws up a detailed plan laying down key topics, assigning responsibilities and setting deadlines. The fundamental stages of the self-evaluation process are supported by systematic and organized collection of qualitative and quantitative data. This will allow the evaluation of compliance with the set standards. The first step be to define the main sources of information and appoint individuals to take charge of collecting and analyzing data. Various sources (audit reports, results of assessment, questionnaires, statistics etc.) is used. Making use of available information saves a considerable amount of time. The following criteria are applied to the self-evaluation methodology:

1. Systematic: The self-evaluation methodology should be well-planned, thorough, and comprehensive. The self-evaluation should be driven by a methodology seeking to answer key questions rather than simple application of a tick-box approach.
2. Objectivity and balance: The methodology used should result in a balanced statement of

current strengths and weaknesses, opportunities and threats and a determination of the action needed to address these and maximize potential.
3. Participation: In collecting data and evaluating the results, the methodology should rely on a variety of groups to agree on key conclusions and recommendations. This is not a way of improving objectivity, but also a way of improving communication and commitment to the findings.
4. Trust and confidential: It is of strategic importance in especially collecting phase data from respondents to build trust as well as fostering their confidence that their information will be kept confidential and will be used appropriately.

Timetable

The comittee set up a timetable laying down the various stages of self evaluation:
- Self-evaluation starts
- Set up the self evaluation group
- Give information on the details of the self-evaluation process
- Assign responsibility for collecting and analyzing data
- Data collection and analysis starts
- Basic data collection and analysis ends
- Draft report
- Complete and revise report

The Steering committee is responsible for establishing an overall timeline for completing the self-evaluation that includes dates for completing the tasks of each subcommittee and for supplying necessary documents and information to the self-evaluation committee. Each committee and work group creates a schedule for its own work that supports the overall self-evaluation effort. Progress reports and interactions among the various committees will aid in assuring adherence to the established schedules for completion (Chahine, Sobhi Abou, 2008).

Findings and Discussions

- **Mission, Vision, and Values**

As stated earlier, in considering mission, vision and values, this study review the organization's guiding principles as a useful reference point for planning, especially when determining how to allocate resources and measure achievements. The following is the guiding principles.

Visi Universitas Terbuka:
Menjadi salah satu pusat unggulan PTJJ di Asia tahun 2010 dan di Dunia 2020.

Visi Fakultas Keguruan dan Ilmu Pendidikan
Menjadi pusat unggulan dalam penyelenggaraan pendidikan guru dalam jabatan (inservice training) dan pemberian sertifikasi pembelajaran (teaching license) melalui sistem belajar jarak jauh.

Visi Program Studi Pendidikan Fisika
Menjadi pusat unggulan dalam penyelenggaraan pendidikan guru fisika dalam jabatan (*in-service training*) melalui sistem belajar jarak jauh.

Referring to the vision of the university (Universitas Terbuka, UT) to be a leading distance-learning mode university in Asia in 2010 and globally in 2020, the effort to adapt curriculum to IQF is justified. The vision and the adaptation to IQF, in some sense, means also a kind of internatiolization of UT. According to William Xue, SE, MM, a lecturer in corporate finance management at Atma Jaya Catholic University, "My concern is not for the establishing phase. It lies with getting the right curricula that can improve the quality of our existing education" (Aulia R. Sungkar, Contributor, August 14 2012).

The vision of the faculty (Fakultas Keguruan dan Ilmu Pendidikan Universitas Terbuka, FKIP-UT), while has an explicit similarity with the vision of UT, i.e. to be a leading distance-learning mode faculty of education, doesn't explicitly implicate an internationalization. However, due to its a part of UT and the fact that it shoud adopt IQF, FKIP-UT, including its physics education study program (PFIS FKIP-UT), should indeed in some sense move toward internalization. To some extent, through what is called *alih kredit* and *validasi ijazah*, PFIS FKIP-UT has already implemented IQF in a national level. In facing ASEAN Economic Community 2015 (AEC 2015) and similar scheme, however, such practices at the level of a nation is not enough, in scope as well as in any other aspects like procedure, standard, etc.. Internationalization is a must. Currently, in view such and other issues, the vision of FKIP-UT is being reconsidered. By implication, the similar formulation of the vision of PFIS FKIP-UT is also under consideration. This study might direct to an appropriate formulation both of the vision of FKIP-Ut and PFIS FKIP-UT.

- **Collaborators and Beneficiaries and Environmental Scan**

This study identify critical stakeholders, with particular attention to their expectations for the plan's development and implementation. To do so, however, this study should examine as well cultural issues, resource concerns, and other factors that may impinge on the planning process. The following is a broad survey concerning challenges, problematic and lesson learned from other part of the world about internationalization of a higher education in general and of PFIS FKIP-UT.

A general remark

Indonesia, in the words of Meidyatama Suryoningrat (2014), is the third largest democracy in the world, the country with the largest muslim population, an archipelagic state and the largest country in ASEAN. With such stellar number and characteristic, no wonder if we have difficulties to substantiate issues with definitive certainty. Even the word discourse is quiet a strong word in such situation. A more accurate and mundane word is what Benjamin called as a mimesis of urban phantasmagoria particularly like the eye's distracting encounter with the city jumble of advertisements, shop signs and show windows: we have only the jumble of words and books –perhaps not even a decent scientific paper, but articles, in case of Indonesia, we have nothing new to say, only things to show (Moorhouse in Anderson, 1995). If Benjamin coined the word "collage of quotation", the following description is a collage of

articles presented in the Jakarta Post, a daily English newspaper in Indonesia. Perhaps as Dickenian London is more real than the real London, the collage is more real than the more decent scientific paper. Echoing the collage is an observation that Indonesians has a tendency to not share knowledge, Indonesians are all about ego.

Challenges

As a member of ASEAN, Indonesia will in soon be shouldering the region's most comprehensive economic policy. The dream was to form an ASEAN Economic Community (AEC) based on an agreement made between member states at the 13th ASEAN High Summit Conference in Singapore in November 2007. With a definite deadline of 2015, the initiative came with the AEC Blueprint as a baseline to implement a free flow of goods, services, investment, labor and capital among member states in the region (Serian Wijatno and Ariawan Gunadi, September 13 2014). One implication of the AEC blueprint is an issue coined as internationalization of higher education.

It meant that foreign universities are welcome to establish themselves in Indonesia. But, they have to follow our system and collaborate with our national universities, including in terms of curriculum development and management (Kompas, Dec. 6, 2011).To promote internationalization, as a member and founder of ASEAN, Indonesia has to consistently implement ASEAN mechanisms. The Joint Declaration on Comprehensive Partnership between ASEAN and the United Nations, which was adopted at the 19th ASEAN Summit in Bali on Nov. 19, 2011, notes in paragraph 5.4.: "… encourage further cooperation of the ASEAN University Network (AUN), in increasing students' mobility and exchanges, creating a network among universities in ASEAN Countries as well as in enhancing people-to-people contact." Similarly, as a member of the United Nations, Indonesia has to consistently implement adopted international mechanisms. As an example, the 27th UNESCO session in Paris on Nov. 13, 1993, adopted recommendations on the Recognition of Studies and Qualifications in Higher Education. Paragraph 19 states that member states should encourage the setting up of mechanisms such as evaluation and accrediting bodies for the purpose of assuring the quality of higher education studies. Not to mention that member countries higher education also should consider not only its own standards but also international standards, for instance the Association to Advance Collegiate Schools of Business International (AACSB) accreditation. Paragraph 19 also states that member countries should encourage international cooperation among such mechanisms and bodies. Overall, after almost two decades of the recommendation, Indonesia is likely still far behind in implementing this mechanism (Hafid Abbas, December 31, 2011). It is in facing this great challenge to implement the mechanism that what we need is a certain comprehensive reform in higher education which will meet regional and international standards.

The higher education reform along with other efforts are most crucial if we take a look at the Global Innovation Index (GII). The 2014 GII ranks Indonesia 87th out of 143 countries in terms of innovation capability. In this aspect, Indonesia still lags behind several of its ASEAN neighbors, such as Singapore (7), Malaysia (33), Thailand (48), and Vietnam (71). Indonesia's ranking is only better than Brunei Darussalam (88), the Philippines (100), Cambodia (106) and Myanmar (140). This report generates concern about the future competitiveness of Indonesia's economy as the largest economy and most populous country in Southeast Asia.

With a population of about 250 million people, and more than a third of its population under the age of 15, Indonesia should not waste its young human resources, which could potentially transform its economy from resource-based to knowledge-based. Before the release of GII 2014, the 2013-2014 global competitiveness index highlighted that in order to transform an economy from factor-driven to innovation-driven, a country needed to improve several aspects, including its institutions, health and primary education, higher education and training, labor market efficiency, technological readiness and innovation capacity. Most, if not all these factors are, to some extent, seriously lacking in Indonesia.

Various development agencies have asserted a clear and consistent message. For Indonesia to sustain its future economic growth and to improve social welfare, it needs to invest more in its human resources. Highly educated and well-trained human resources are critical for an innovation-driven economy. GII 2014 shows a positive correlation between a country's development stage and the percentage of the population that has completed higher education. Economies at the catching-up stage are often trapped in a vicious circle, where economic development fails to provide sufficient incentives for their young to pursue higher education, and without enough skilled people, these economies will not be able to move up to a higher development level. In view of this, Indonesia can learn from other countries that have succeeded in preparing their human resources to support economic transformation (Siwage Dharma Negara, August 09 2014), especially though reform in their higher education.

Problematic

In meeting the challenges, several problematic need be considered either as opportunity or as threat to a better higher education. They are among other talent shortages, underfunding and inequality, low scientific productivity, many-sidedness of lecturer job and the question of community college.

Talent Shortages

Reform in higher education should also be sensitive to the issue of talent shortage. Indonesia's impressive economic growth in the last decade has many pundits predicting that the country's rise will last well into the current century. Judging by past and current trends, Indonesia's economy is likely to break into the top 15 in the world in the next decade. Serious talent shortages, however, threaten to undermine this positive and promising scenario for Indonesia. The challenges are obvious and many companies risk being left behind by being forced to decelerate their expansion plans unless they can recruit, develop and retain competent human resources. Many Indonesian companies are already facing talent issues at all levels, both qualitatively and quantitatively.

A recent report by the Boston Consulting Group has highlighted the issues of talent shortages in Indonesia, which concludes that the already bad talent shortages for managerial positions in Indonesia will worsen. The shortage is already acute at the middle management levels, and by 2020, there will be a need to fulfill the demand-supply gap of around 40 to 60 percent. At senior-leadership levels, while modest leadership shortages may occur, the main challenge will be the lack of managerial and leadership experiences in the global context. At the entry-level, although the shortage is less severe, the lack of appropriate education, relevant skills

and training among recruits is already a serious limiting factor for many companies. This situation will deteriorate rapidly and by 2020, many companies will be unable to fill about half of their entry-level positions with qualified, competent candidates.

In addition to these talent shortages for managers, technical resources are also in short supply. Annually, Indonesia graduates about 30,000 engineers. But the country's economic growth requires around 50,000 engineers every year, a 40 percent shortfall. By 2025, this shortage is expected to increase to more than 70 percent. Few of today's graduates in Indonesia are sufficiently qualified for the positions available in the job market. A World Bank report of 2010 on Indonesian skills indicated that the skill profile of the human capital has not evolved along with the demands of the labor market. Skill mismatching is a major obstacle to furthering Indonesia's economic growth. Although many companies face an aging workforce, few offer lifelong learning opportunities to keep skills current. In the BRIC (Brazil, Russia, India, China), and many other emerging countries, the percentage of prospective employees with sufficient education and skills, especially in middle management, will be a fraction of what is needed (Aulia R. Sungkar, Contributor, August 14 2012).

Another perspective about talent shortage is about the number of PhD in social and natural sciences. Indonesia must improve its competitiveness by producing more PhD graduates in natural and technology sciences, said Indonesian Chamber of Commerce and Industry (Kadin) vice chairman Peter F. Gontha on Friday. Indonesia, with a population of 250 million people, has 30,000 doctorate graduates, with about 80 percent studying social sciences. India and China had more PhD graduates, with most studying natural science and technology, Peter said."Let us take a look at China, with a population of 1.3 billion people, and India, with 1.1 billion people. They have 800,000 and 650,000 of PhD graduates respectively; 60 percent of which are science and technology majors," he said during a discussion panel in Wharton Global Alumni Forum in Jakarta. As a result, he said, Indonesia does not have any major technological brands, while other Asian countries, which have been intensifying their doctorate degree programs, are building technology brands by utilizing PhD graduates in companies' research and development departments. "What we have are Gudang Garam, Djarum and Indomie. Other than that, we have nothing," he said, citing Indonesia's major cigarettes and instant noodle producers. Gontha suggested that if the nation did not produce 10,000 PhD graduates a year over the next 10 years, it would not be able to compete with fast-moving global competition (The Jakarta Post, June 23 2012).

Underfunding and Inequality

Reform in higher education, first of all, should be sensitive to the issue of underfunding and inequality. According to UNESCO data, Indonesia's spending on education as percentage of GDP has slowly decreased in the early years of this century. While in 2003, Indonesia spent only 0.9 percent of its GDP on education, its neighbor Malaysia spent nearly 8 percent! The chronic underfunding of Indonesian education was acknowledged by the Megawati government. The pledge to allocate 20 percent of the government budget on education was even incorporated in the Constitution. This constitutional duty has been repeated in several court rulings afterwards. But what is going on in reality? And how does this compare to Indonesia's neighbor Malaysia? Malaysia however spent even more than 20 percent in the first years of the 21st century, while Indonesia did not even reach 10 percent in 2001 and 2002.

However, there has been some progress after 2002. For 2006, the expenditure on education is 11.8 percent of the budget. Some improvement, but still far from the promised 20 percent.
For the university sector, the situation becomes even more severe if we keep in mind that Indonesia spends relatively less of its education budget on higher education. For Malaysia, between 30 and 35 percent of its education budget went to higher education between 2000 and 2003. For Indonesia that is less than 25 percent. What is interesting to look at in this respect is where the money is spent. The majority of Indonesian higher education spending is current expenditure. For Indonesia that is over 80 percent, of which nearly 100 percent goes to salaries. For Malaysia, current expenditure is around 50 percent and much less of this goes to salaries. Capital expenditure for Indonesia thus is very low, pointing to a serious underinvestment in the infrastructure and facilities of Indonesia's universities.

What has been the result of all this? Basically two things. For Indonesia it has led to rigorous inequality for higher education. In the past decades the government has done a good job in eliminating inequality in elementary education. But if we consider data on equality and access, we can see that inequality increases drastically with the level of education. While over 30 percent of the richest quintile receives higher education, of the poorest quintile only 3.3 percent is that lucky (AM Eric Beerkens, July 21 2007). Other data mention that the proportion of quintile one (the poorest 20 percent of the population) studying at universities is only 4.4 percent; meanwhile, the proportion of quintile five (the richest 20 percent of the population) entering higher education institutions has already reached 43.6 percent. Education is a public good, that is indisputable. But whether higher education is also a public good, has long been a subject of scholarly debate among experts. Such a debate is instigated by two related views. First, the economic benefits of higher education mostly go to private individuals rather than to society in general. Economic benefits include all kinds of advantages whether monetary or non-monetary, which can be equalized to material wealth. Private individuals should therefore share a larger portion of the cost of higher education, as they benefit much more from it economically. Second, the logic of this view asserts that public funds should not be allocated in large proportion to higher education, as it produces mainly private economic benefits. And those benefiting from higher education are mostly from high-income groups. Indeed, they enjoy very much the benefits of investment in higher education. Two prominent economists, George Psacharopoulos and Harry Patrinos (2004), have analyzed returns on investment in education by income in both developed and developing countries. In developing countries with about US$3,000-$9,000 of income per capita, returns on investment from higher education for the public and private sectors are 11.3 percent and 19.3 percent respectively. Similarly, in developed countries with an income of $9,500 above the share of public and private returns on investment in higher education is 10.8 percent and 19.0 percent respectively. But the gap between the two is much wider in low-income countries with less than $1,000 of average earnings, accounting for 11.2 percent and 26 percent respectively (see Handbook of the Economics of Education, E.E. Publishing Ltd., 2004).

Nonetheless, is the argument saying that high-income groups reap the predominant economic benefits of higher education valid? Perhaps we should take into account the counterargument showing that middle class families and individuals who complete their tertiary education are tax payers. As they get jobs, they take part in economic activities which are supportive of national productivity. A number of studies confirm that university-educated workers

especially those with advanced knowledge and skills relevant to industry are much more productive. As a result, the incomes of college graduates increase faster than the incomes of those without tertiary education. In this context, they make a significant contribution to generating public revenue and creating shared economic resources for the common good. Here, public funds collected from tax are then allocated for financing basic social services such as education. Yet, some people may argue that there is still a big problem related to the affordability of higher education.

To promote equility in higher education, it must be affordable for all young people regardless of their socio-economic backgrounds. To do so the government has introduced the so-called Bidik-Misi scholarship program for students from low-income families. The Bidik-Misi scholarship program is considered a breakthrough since it paves the way for poor students to enter university. This program has four main objectives: (1) improving access to higher education in order to lessen the gap in educational attainment between the poor and the rich; (2) widening the coverage of higher education in the young and productive population in order to enhance the competitiveness of Indonesia's economy; (3) enlarging educated middle class groups in order to establish strong socio-economic structures; (4) expanding the critical mass within society in order to strengthen the social and cultural basis for the improvement of political democracy and for the betterment of the nation.The beneficiaries of the Bidik-Misi scholarship program are increasing from year to year. Indeed, it is designed to respond to public aspirations that demand equal access to higher education. In this respect, it is reasonable if the government applies an affirmative action policy to overcome financial constraints for disadvantaged groups to get enrolled in university (Amich Alhumami, June 01 2013). In the perspectives of internationalization of higher education, one crucial question is whether Bidik Misi could or should extend to be similarly applied to neighboring countries.

The second result of the underfunding in education is that the autonomous BHMN universities are becoming ever more entrepreneurial. This in itself is not a problem and it is seen (and encouraged) in nearly all countries. The Indonesian BHMN universities have transformed themselves in only a few years and have handled the radical changes relatively well. But they are in a state of serious underfunding, especially if we consider that the demand upon them has grown. Increasingly they are expected to deliver high quality research and, much more than their Malaysian counterparts, rely heavily on the market and the private sector to acquire research funding. Somewhere along the line you will have to ask whether one type of domination is just being replaced by another. Indonesian higher education should not be left solely to the "tyranny" of the market. Market mechanisms can do a lot of good in distributing scarce resources, but higher education is far too important for social progress and economic development to rely solely on the market. In this light the increase of subsidies can be seen as too little too late. Maybe it is never too late to invest in education, but an increase from Rp 12.9 trillion to Rp 13.5 trillion (US$1.5 billion) in the subsidies for universities is definitely too little.

Despite the tendency of such ever increasing state budget, in early decade of the millenium, the government has decreased its subsidies for state-run universities and encouraged them to find their own funding sources. Starting from 2000, Indonesia's leading four institutions have -- in financial terms -- basically been privatized. Bandung Institute of Technology, Bogor Institute of Agriculture, University of Indonesia and Gadjah Mada University received the so-

called BHMN (corporate body) status. BHMN means greater autonomy and autonomy is necessary, partly because the universities, under the Soeharto regime, suffered from a lack of academic freedom. But autonomy does not just mean academic autonomy; it also means financial autonomy because universities are seen as inefficient and ineffective. And this basically translates into budget cuts. These cuts are so severe that some of the universities now only receive a small part of their financial means from the government (AM Eric Beerkens, July 21 2007). However, BHMN is now definitely overruled for all other higher education, saved those few mentioned. An alternative today to BHMN is now called BLU, general service institution.

Court case of the Higher Education Law on July 12, 2012 in the Constitutional surfaced yet another kind of inequality between state-run and private universities. The law creates a paradox between state and private higher education institutions. Article 74 of the law stipulates that state higher education institutions have to receive at least 20 percent of their total enrolment from the economically disadvantaged, not from those who have high academic potential. As a state institution, all of its expenses will be funded by the state budget. Therefore, it is not necessary to limit the quota for the economically disadvantaged. It can be up to a 100 percent because they are public. It would make sense if the law guaranteed, on the basis that a private higher education institution receives 20 percent of those disadvantaged students, the sufficient state budget to compensate the institutional expenses. In any country in the world, private education is always much more expensive than a state one. However, this is not the case in Indonesia. At one state university in Jakarta, the tuition fee for a graduate program is Rp 13.5 million (US$1,404) per semester, but at a private one is about Rp 2-3 million per semester or Rp 100,000 per month (www.unpam.ac.id). One can, therefore, easily speculate that such private institutions could operate far below the minimum academic standards. Katerina Tomasevski, the United Nations special rapporteur on rights to education in Indonesia (2002), simply associated these realities to a massive diploma disease in society (Hafid Abbas, October 27 2012).

Low scientific productivity

Indonesian higher education has been in a bad shape over the past years. The country ranked 64th among 243 countries surveyed, according to the SCImago Journal and Country Ranking (Kompas, Dec. 11). From 1996 to 2008, we only managed to publish 9,194 scientific documents, falling behind Turkey (171,048), Iran (68,401), Egypt (47,420), Malaysia (29,166). Saudi Arabia (26,763), Pakistan (24,564), Jordan (10,751) and Bangladesh (9,590). Another authoritative international survey on higher education is the QS World University Rankings. This ranking is slightly more comprehensive, focusing on more aspects than research publications alone. Previously in 2009, the University of Indonesia ranked 201st. The achievement was vividly displayed in banners across the university campus. Every morning, lecturer, researchers, and students alike were greeted by these banners at the university's main gate. The unofficial buzz for the university was to get into the top 200 universities in 2010. So how did we perform in 2010? University of Indonesia (UI) fell 35 places to 236th. Other Indonesian universities followed suit. Gadjah Mada University (UGM) slumped by 71 places from 250th to 321st. The Bandung Institute of Technology (ITB) slipped from 351st into the 401-450 category. Airlangga University slid from the 401-450 category to the lower 451-500 tier.

Many national media publications lamented in their editorials how Indonesia's education — and the international surveys that measured them — were politicized in nature, defying the universal ethics of "truth and honesty". The methodology applied in the survey was also criticized, arguing that higher education is not only about scientific publications alone.
However, being critical is important. But, Indonesia certainly cannot afford to be hypercritical or hypocritical to these findings. A hypercritical attitude, dismissing such findings altogether because of its biases, will simply throw away the baby along with the bathwater, not allowing us to learn from our past failures. A hypocritical attitude is even more detrimental, welcoming the results when we rank highly but dismissing them when we are not performing well. To sum up, both surveys showcase similar disheartening results for Indonesia. It is important to bring the findings to attention, despite their biases and shortcomings. The intention is not to defame our respective institutions of higher education, but simply to remind that improvements are much needed this year. There is a close relationship between the production of knowledge and a country's international power as well as prestige. A highly productive higher education system will supply the national economy with skilled graduates, produce and disseminate knowledge through its scientific research publications, and also provide policy inputs for various national stakeholders (Pierre Marthinus, January 08 2011).

Division of labor

Higher education and its production of knowledge should be taken seriously as a strategic industry with an embedded social purpose. On the institutional level, there are many challenges that our higher education institutions need to thoroughly address. One simple problem that is seemingly petty, yet manages to come up in most colleagues' conversation and ranting, is the "division of labor" within Indonesia's higher education. Ideally, institutions of higher education will consist of three types of labor, which are lecturers, researchers and managers. Lecturers are required to produce qualified and skilled graduates that will feed the national economy. On the other hand, researchers are required to produce and disseminate knowledge through scientific publications and to assist national stakeholders through their policy insights. Lastly, managers are needed to technically run the institution by allocating labor and financial resources to obtain their maximum efficiency and highest return. In reality, Indonesian academics are required to juggle several — if not all — of these functions at the same time, which takes a hefty toll on their productivity. There are many instances where the most capable and passionate lecturers are kept outside the classroom, neglecting the nation's young and brilliant minds, because they are required to "either publish or perish". On the other hand, experienced and professional researchers are demanded to fulfill a certain amount of teaching credits, keeping them away from their most cherished and productive activity of researching.

Furthermore, lecturers and researchers alike are placed in technical/managerial positions, taking care of administrative, financial and bureaucratic matters, inevitably devouring a large portion of their time and energy. Some academics feel the joy of multitasking but a growing number are reluctantly doing it in order to secure their employment as well as the income that comes together with it. Proponents believe that the multitasking academics are the way forward, arguing their case for a research-based teaching curriculum. However, taking up multiple roles should be a privilege of personal choice instead of a responsibility and

employment conditionality that is imposed. On the institutional level, policy should be geared either to provide better support for these "multitasking academics" or to establish a better division of labor. Indonesian centers of excellence will need to regroup to solve their common problems. If these hiccups are left unaddressed, it is likely that our higher education will do another "freefall" in this year's international ranking (Pierre Marthinus, January 08 2011).

Community college?

Reflecting on further side (than that mentioned earlier) of Court case of the Higher Education Law on July 12, 2012 in the Constitutional Court (contrary to what happen in Japan, see below), the disputed law introduces community college (Article 59) that is to be established at all districts, or municipalities, across the country. This is a paradox, Indonesia has enjoyed a significant annual economic growth of up to 6.5 percent during the last several years, has achieved a significant increase in its middle class society — of 9 million people a year in the last several years (tribunenews. com, Oct. 31, 2011), has allocated a minimum 20 percent of the national budget for education, and currently is starting to implement a universal 12-year basic education, but the gross participation rate at higher education remains stagnant at 17-18 percent (4.6 million students) to the total population at age 19-24 (25 million). Education statistic data indicates that enrollment in 2009/2010 was 1.024 million, an increase from 997,000 in 2008/2009, and a decline from the 1.09 million in 2007/2008. (MOEC, 2011). There is a great stagnation of gross participation rate at higher education institutions. As a result, community college appears to be a very short-sighted solution to address the flat and declining trend (Hafid Abbas, October 27 2012).

High time for internationalization

Globally, the number of internationally mobile students is increasing rapidly, reflecting the expansion of enrolment in higher education, which has grown by 78 percent in a decade. According to UNESCO data, at least 3.6 million students in 2010 were enrolled in higher education abroad, up from 2 million in 2000. Asia is the top regional source for international students, constituting 43 percent of international students studying in Organization for Economic Cooperation and Development (OECD) countries. It also provides four of the five top source countries. Annually, China, including Hong Kong, accounts for 10 percent (or 147,000) of all international students in the OECD area. It is followed by second-ranked South Korea (5 percent or 70,500), then India (4 percent or 61,000) and fifth-ranked Japan (3.8 percent or 55,000).

Regions that host the largest number of internationally mobile students are North America and Western Europe (58 percent); East Asia and the Pacific (21 percent); and Central and Eastern Europe (9 percent). For Asian international students, the US (receiving 44.3 percent of the students) appears the most popular among OECD countries, followed by Australia (12.5 percent) and the UK (11.3 percent). The most popular disciplines are business, IT, engineering and science as well as technology-related studies. Approximately two-thirds study at the undergraduate level, the remainder at postgraduate.Indonesian students make up about 1 percent of global internationally mobile students. Annually 30,000 students travel abroad and this is about 0.8 percent of the total tertiary-level students in Indonesia. In comparison, the corresponding numbers are about 46,000 and 6.1 percent respectively for Malaysia, 24,000

and 0.9 percent respectively for Thailand and 28,000 and 1.9 percent respectively for Vietnam. The top five destinations for Indonesian students are Australia (10,500), US (7,500), Malaysia (4,500), Germany (1,700) and Japan (1,500). The total number of international students studying in Indonesia is about 3,000 students. This means an inbound mobility rate of 0.1 percent. The corresponding figures are about 24,400 and 3.3 percent respectively for Malaysia, 11,000 and 0.5 percent respectively for Thailand and 3,200 and 0.2 percent, respectively for Vietnam. These low figures for Indonesia invite all of us to work harder for an increased internationalization of higher education in Indonesia. One needs to pay more attention to the content and aims of internationalization. Internationalization within higher education has many dimensions. It includes the type of courses/programs offered, the teaching material, curriculum content, the diversity among students and staff in addition to the learning environment and context (Said Irandoust, January 11 2014).

In Indonesia, in the past, internationalization has been perceived as a danger that could deteriorate nationalism. The implication is the isolation of Indonesia as higher education destination for foreign students. In 2008, for example, the total foreign students in Indonesia was only 5,388, dominated by Malaysia, 2,227 (41 percent) and Timor Leste, 2,257 (42 percent). In comparison, Singapore and Malaysia hosted some 70,000 international students (Hafid Abbas, October 27 2012). However, by 2020, Indonesia will have one of largest college-going population in the world. This chunk of the population requires internationalized higher education, as they will shoulder Indonesia's economic development journey. The time for internationalization of higher education, research and innovation in Indonesia is now. Internationalization of higher learning will result in increased quality and efficiency of the universities and their outcomes, put Indonesia in the global map of the higher education, research and innovation, stimulate and catalyze the socioeconomic growth and promote Indonesia in all aspects globally (Said Irandoust, January 11 2014).

Internationalization is also a state of mind The aim of the internationalization of higher learning must be toward supporting various processes of integrating an international-intercultural dimension into teaching and learning, research and innovation and service functions of the universities. This would result in the increase in flow of ideas, attitudes, values, technology, economy and people across borders — all necessary responses to the impact of globalization. In other words, internationalization of higher education, research and innovation is considered as an agent of globalization, with a corresponding impact on labor markets, knowledge-based economics, life-long learning, mobility of faculty and students and the mobility of knowledge and innovations.

Some major issues affecting the future development of internationalized higher education, research and innovation are: impact of globalization on the economy and society; emergence of new and mostly private providers of higher education and growing emphasis on competitiveness; emergence of international alliances and networks in higher education, research and innovation, between universities and between universities and companies; internationalization of innovation; perspectives of different sectors in the society directly or indirectly related to higher education, research and innovation; and flexibility of regulatory framework as well as openness to attracting talented foreign students and staff.

Some important activities to be considered are: student mobility and student exchange

programs, including work-internships abroad; recruitment of internationally mobile students and faculty/staff mobility programs, both for teaching and research; joint and double-degree programs between universities; internationalization of curriculum, including curriculum development programs; language and culture training; international research projects; and joint research centers, universities and stakeholders.

Countries in the Asian region are coming up with innovative ways to manage and regulate international education, research and innovation. Singapore and Hong Kong are seeking to become leading education, research and innovation hubs, and are selectively encouraging foreign providers to attract international students and staff. Malaysia is promoting itself as an education hub. India is establishing transnational education operations in Sri Lanka and China. Can Indonesia become a research, development and innovation hub in Southeast Asia? It can but not without serious changes to the way higher learning is organized, including the associated regulatory framework. To achieve an innovation-driven knowledge society in Indonesia, we must face up to a hard truth: our universities and the way the government looks at internationalization of higher learning needs to change, and they need to change now. An interesting phenomenon that continues to seriously limit the internationalization of higher education, research and innovation in Indonesia, are the restrictions originating from the time of Soeharto, such as the absence of student visas for foreigners and difficulties in appointing foreign academic staff within the Indonesian university system. The Indonesian government needs to seriously look at how it manages and regulates the internationalization of the universities (Said Irandoust, January 11 2014).

An internationally minded future

The world is a rapidly changing place. Human population numbers hit the 7 billion mark back in early 2012. The proliferation of the Internet and widespread use of social networking means that geographical distance is no longer a hindrance to the exchange of ideas. All of this means that making your mark in society has become a bigger challenge than ever. Preparing Indonesian citizens for this new job market means that educators have to rethink the way that they prepare students for the future. Students themselves, especially ones who are already in college, have to do much more than simply just be great book learners getting straight as on exams. One of the most important qualities that would-be job seekers need today is “global readiness”, according to IPMI International Business School head of marketing communication Amelia Novincy Umboh. “In today’s era, we are being challenged with cross-cultural settings and a struggle to survive through a continuously changing business landscape,” she said. “Therefore, an ability to envision a global perspective while simultaneously being able to apply these global considerations within a local context is considered a rare competitive advantage.”

Part of the process of becoming ready for the world involves undoing traditional teaching policies and learning habits that run counter to this new globalized mindset. For instance, according to Amelia, Indonesian students are not accustomed to critical thought and are taught since an early age that differences are undesirable. Indonesian students also need to take heed of UNESCO’s four pillars of higher education: learning to know, learning to do, learning to live and learning to be. According to London School of Public Relations Jakarta deputy director Andre Ikhsano, learning to do is the most crucial pillar of the four.“Learning to do is

closely related to certain study programs like communication studies. Things that you need to learn to do include presentation skills, public speaking and confident multilingual skill," Andre said. "These are very useful skills that will be good investments."Higher education needs to work hard to build on this. One source of inspiration it can look to is the education system of Scandinavian countries like Sweden, which is currently on top when it comes to producing innovation, despite having originally started off as a poor country ages ago. "How did they do it? Each student learns to make mistakes. They find the solutions to those mistakes. And they evaluate themselves by comparing their current and past results," Amelia explained. This system applies from kindergarten to higher education. The result ought to be outspoken and independent individuals ready to face an ever-changing social setting and business market. Institutes of higher education can help students towards this end. "The role of higher education in preparing graduates to compete internationally consists of many approaches like cooperating with foreign universities for dual-degree agreement, student and teacher exchanges, international classes and joint research," noted Andre. Other internationally-minded ambitions that local higher-education institutes need to embrace include international student bodies that can help students learn to communicate, interact, and transact with foreigners. Successful alumni should also be used as student role models. Providing a good career development office is also a necessity. Partnerships with leading industry members can give students real-life opportunities and experiences.

Basic necessities for higher education in the future also include providing adequate laboratories and digital libraries. Having up-to-date technology in general is important for preparing college students for the future, especially since electronic learning (or "e-learning", for short) is becoming an increasingly viable and useful way of acquiring an education. "This method enables the equal spread of education. It overcomes time and space boundaries and can help improve a student's skill, confidence and proactive attitude toward the materials they are learning," Andre said, adding that the use of technology to provide videos, interactive visuals and simulations during the learning process can allow students to more easily digest difficult materials. "Modern technology also makes their lives easier. They can have e-book instead of carrying heavy books. They can have an e-CV instead of sending their resume via post mail. They don't have to stand in a long line at the bank counter to pay their tuition fees. It really does change our standard of living," Amelia added. She noted that digital education can be a boon for those who don't live within a convenient distance from their schools. They also provide comfort for those who have any difficulties studying in regular schools.

According to British daily newspaper The Guardian, many colleges and universities are developing flexible approaches that tailor students to the employment needs of the economy. It cited an example of a university working with local employers toward this end. "Students will come in to talk about their aspirations, their past experiences, their qualifications, their jobs, and a bespoke opportunity will be created for them, which will pick up modules and put them into a special package for that individual student." Ensuring that both students and educators are adequately prepared to face an increasingly interconnected and competitive world is an important way of dealing with the globe's changing social landscape. They need to aim high. "There are three types of people in this world: 1 percent of people, those who make things happen, 4 percent of those who watch things happen and 95 percent of those who wonder what happened. In order to compete with these numbers, students must aim for 'making things happen,'" Amelia said (Prasiddha Gustanto, July 07 2014).

Int'l focus gives better courses

Indonesia's leading higher education institutions now provide more advanced curricula, international experience and job opportunities for today's young people.What makes for a quality higher education? The criteria may be different for each student or parent and is determined by the course and career prospects they seek, as well as external factors, such as campus location and environment.Over the years, however, a number of trends have risen in the higher education scene in Indonesia. Along with the internationalization of schools across the country in general and Jakarta in particular, universities and higher education institutions have followed suit.

On one hand, there are institutions like LaSalle College International Jakarta, the Swiss German University (SGU) and INTI College Indonesia, which set up shop in and around Jakarta. These globally-affiliated schools offer international-standard programs for students looking for "efficient and cost-effective" education, in the words of 19-year-old Mamta "Mahek" Uttamchandan. Mahek, who went to Mahatma Gandhi International for high school, is now continuing her degree at INTI College. She expects to receive an INTI diploma on top of a bachelor's in business administration (BBAD) degree from the University of Southern Queensland after completing her studies. "I decided that INTI would be the best option for me to obtain an international degree in 2.5 years. INTI features different ways of gaining an international degree from Australian universities and has partner universities in Australia, allowing students to transfer easily." Mahek's mother, Kareena-Joty, admitted to being completely involved in the education of her child. She thinks the main issue to be considered when judging a quality higher education is curriculum. "The curriculum tells us what students are going to learn and achieve from it. At INTI for example, apart from its complete English environment, the institution also regularly awards students for their outcomes. This is a factor which motivates students to strive and reach for the stars," she said.

INTI alumnus Wira Anatoly did his business diploma between 2007 and 2009 and is currently working as an account executive for a lifestyle magazine. "My work involves a lot of business presentations, client liaisons and market research. All of those skills were introduced during my studies at INTI," said Toly, 21.One major plus for him was INTI's offering of full English courses with an opportunity to put his knowledge into practice. "Comparing my past studies with other friends from Indonesian universities, most of them had to go through broad subjects before focusing on a specific major. I feel this system is more theoretical than practical, though there have been improvements in past years."

From a teachers' point of view, SGU's vice rector Filiana Santoso pointed out that Indonesian high-school graduates generally have a different character from those studying in more developed countries: "Their level of independency, maturity and criticism is not as sharpened as that of foreign students. This becomes the major challenge for Indonesian higher education institutions to bring the students to be not only knowledgeable, but more importantly to develop their EQ and soft skills." To this end, SGU's philosophy lies in preparing and polishing students through a set of real-life cases, situations and jobs with intensive internship programs held overseas especially in Germany. "In Indonesia, the current trend is not just to get a better job but to create the job for students themselves," said SGU's head of public

relations, Peggy Odang.

One success story is Roestiandi Tsamanov, who graduated from SGU's mechatronics engineering department in 2004 and now owns and runs DSI Laser International Indonesia. Voicing everyone's belief, Elke Alexandrina, dean of the Department of PR, marketing communications and international relations Studies at STIKOM The London School of Public Relations (LSPR), says a higher education degree provides graduates with analytical, problem-solving, communication, presentation and linguistic skills to boost their performance, confidence and credibility in the workplace. Douwes Lasmana from LaSalle College agreed: "Undergoing a higher education course helps students upgrade the quality of their intellect and give them the skills and network to prepare them for work." According to Elke, LSPR's "City College" concept gives students a comfortable and homey environment. "Our students' success stories have emerged from their hard work in academic subjects while having fun and being creative and bonding and collaborating with other students and lecturers."

Meanwhile, at LaSalle, the focus is on exposing students to the industry through various field trip programs, internships, career days, and also events organized by and for students. "Another philosophy applied at LaSalle is the value of mutual symbiosis, where students can support or be supported by students from other departments," said Douwes. All students and teachers agree that with the broad selection available in today's education market, doing a thorough research is crucial before deciding which higher education pathway or institution to join. "There has been a lot of development and improvement in the quality of higher education in Indonesia with its internal and external accredited systems, so students should change their mind-set about Indonesia not having good international-standard universities," said Mahek. INTI College's managing director Sudino Lim added: "Quality higher education should result in graduates who can contribute to social development and responsibility. We can't isolate Indonesia from the international world, therefore our young generation should be equipped with imaginative minds in pursuit of a better future."(Andrea Tejokusumo, August 14 2012).

Value of advanced business degrees for a lifetime

Dara Lengkong always knew it takes more than good recommendations to land the perfect job and build an accomplished career path. By the mid 1990s, she had only an undergraduate degree from a local university in Jakarta. Learning, she believed, would take her higher and further. "I felt that an MBA degree would greatly complement my education background and help broaden my career opportunities down the road," said the senior consultant at the World Bank office in Indonesia. She turned to the US to realize her dream. In June 1996, she graduated from Columbia Business School in New York – and she says prestigious job opportunities came her way. "Having an MBA degree, particularly from a highly reputable university, gives you a competitive edge. When recruiting, employers often get hundreds of applications, and having an MBA degree from an internationally well-known university often catches their eye and sets you apart from other applicants," Dara said.

Further testament to the fact that MBA graduates are highly sought after by top companies comes with the January 2013 survey by the Graduate Management Admission Council. It showed that 92 percent of 2012 business school graduates worldwide found jobs three months

after graduation, up from 86 percent the previous year. A separate survey found that two thirds of international employers are planning to hire recent MBA graduates around the world in 2013, and expect to increase the number of new MBA hires. Alex Bastian is looking forward to that rosy future. The program planning and scheduling manager at a leading TV station is planning to graduate with an MBA degree from Manila-based Asian Institute of Management this year. He believes the grueling education in business-related disciplines is arming him with essential corporate management strategies. "The school applied case methods in its courses which at some point became a challenge for those of us who did not major in economics or management. We needed to catch up with theoretical frameworks on our own so we can discuss and understand better," said Alex. "For me, the most important thing about an MBA is experience. We can learn from our own experience, or case methods, from other people's experience. The program gives us an applied-science sense to that experience. Some people became successful by a series of trial and errors; hopefully an MBA education can shorten that process."

While education is a major determining factor, some argue that it may not be all it takes in such an increasingly tight job market and severe talent shortage in Indonesia. "Apart from technical skills to do the job, most companies are searching for people who can display a proven track record of achievement. Candidates who are professional in the way they conduct themselves and can demonstrate high levels of honesty and integrity are becoming highly valued and sort after," said Andrew Hairs, regional director at Monroe Consulting, an executive recruitment company with offices throughout Southeast Asia. He also warns that although it's a popular path, MBA education may not be suitable for everyone; it was originally designed for people who had already entered the workforce and people need to ask themselves if it will actually lead to a healthy return on investment in their career progression and income, he said.

For Dannif Danusaputro, director at a Singapore-based regional private equity firm, the answer to Hairs' question is a definite yes. Before graduating from Stern Business School at New York University in 1997, he worked at the consulting firm of Arthur Andersen. Right after graduation, he took up an offer by GE Capital in Connecticut. Stellar school reputation, he says, gives you a head start when it comes to job hunting. "I had about four years working experience prior to the MBA program. However, the degree from NYU was a big influence in securing (my latter) jobs. I got my job from campus recruitment process. It wasn't only the job after the MBA program, but it also helped me land several jobs thereafter," said Dannif. "I believe MBA education is suited for people who want to have a career in multinationals, banking, consulting and other structured organizations. MBA education gives you good fundamentals to become a good corporate citizen."

As more people continue to realize the value of an MBA in ways that affect their creative thinking and work exposure, some say it is worth remembering that not all MBAs are created equal. Arief Novisto, product specialist manager for CIMB Niaga received his MBA from Vanderbilt University in Nashville, Tennessee, in 1999. "I wouldn't trade that for anything," Novisto says."It's not for everybody. I don't think there's an ideal anything for everyone. But if you're lucky enough to go to a good school, can sustain the rigors of study and want to work in a corporate environment, then it might be a worthwhile endeavor." Dara concurs with the sentiment. "Having an MBA degree from a mediocre university may not give you much of

a competitive edge when applying for a job, considering the increasingly tight competition. Aim for an internationally reputable university, if possible. This is helped by having some good prior working experience and solid undergraduate degree," she said (Sondang Grace Sirait, June 18 20130.

Experiences of selected countries

Europe

Apparently, European countries have successfully implemented internationalization of higher education through the Bologna Process.The Bologna Process aimed to create a European Higher Education Area by 2010, in which students would be able choose from a wide and transparent range of high quality courses and benefit from smooth recognition procedures. This process was adopted in June 1999, six years after the 27th UNESCO Session. The process has triggered a series of reforms needed to make European higher education more accountable, compatible, more competitive and more attractive for Europeans and for students and scholars from other continents (Siwage Dharma Negara, August 09 2014).Within the Bologna Process, higher education systems in European countries are to be organized in such a way that: it is easy to move from one country to the other (within the European higher education area) – for the purpose of further study or employment; and the European higher education area provides Europe with a broad, high-quality advanced knowledge base, and ensures the further development of Europe as a stable, peaceful and tolerant community benefiting from a cutting-edge European research area.

USA and Mexico

The Laureate model, under the key leadership of President Bill Clinton as Laureate's Honorary Chancellor, by adopting the Bologna Process, has more than 75 campus-based and online universities offering undergraduate and graduate degree programs to over 850,000 students around the world. Laureate's students are part of an international, academic community that spans 29 countries throughout the Americas, Europe, Africa, Asia and the Middle East. As a community of universities in a single system, Laureate institutions offer hundreds of career-focused undergraduate, master's and doctoral degree programs in such fields as architecture, art, business, culinary arts, design, education, engineering, health sciences, hospitality management, information technology, law and medicine (www.laureate. net).Every institution in Laureate's network operates as its own unique brand, guided by local leadership and actively involved in its community. Relationships among the institutions in the Laureate network are enriched with shared curricula, faculty, degree programs and student exchange opportunities (Hafid Abbas, August 09 2014). A success story of the Laureate model is the vase of the Universidad del Valle de México (UVM). During the last decade, several Mexican universities have immersed themselves in international networks. These networks generally operate by memoranda of understanding that, among other qualities facilitate faculty and student exchange as well as joint research and publication. However, a unique model that takes internationalization a few steps further is illustrated by UVM. By its collaboration with Laureate International Universities, UVM has become Mexico´s largest private university and one of the top 10 in the country. As a result of this cooperation, UVM

became part of an international partnership that includes 75 universities in 29 countries, with a total of over 850,000 students worldwide (Hafid Abbas, October 27 2012).

Malaysia

To address both regional and global challenges, as a comparative perspective, Malaysia could be a sound example on how its higher education has been developed in such a way that it could bring its universities, step by step, to an international level. In the past two or three decades, Malaysia invited a few international world-class universities to establish their campuses in Malaysia. In 1999, for example, Malaysia invited Curtin University, Australia, and the University of Nottingham, the UK, to establish campuses in Malaysia.Interestingly, the Malaysian government already has a master plan for the development of campus locations for each invitee. Curtin University, for example, is located in Miri, Sarawak, which in the past was a relatively underdeveloped area. Through this policy, the area is now greatly developed and is a destination for tertiary education, not only for Malaysian students but also for students from some other 40 countries throughout the world.The presence of some 70,000 foreign students will act as a great revenue contribution to the Malaysian economy.

China

Another example is China. As reported by the Chinese Ministry of Education (2010): During 1978 to 1992, the internationalization of higher education in China was essentially motivated by a desire for realizing "the four modernizations", which were modernizations of industry, agriculture, defense and science and technology, through implementation of economic reform.Under this policy reform, currently the internationalization of higher education in China takes three major forms: (1) studying abroad, including dispatching Chinese students abroad and members of faculty for advanced studies or research and attracting foreign students; (2) the integration of an international dimension into university teaching and learning, including introducing foreign textbooks, references and the development of both English programs and bilingual programs (Chinese and English); and (3) the provision of transnational programs in cooperation with foreign institutional partners in Chinese universities. Through this reform, China is now one of the top 10 largest countries in hosting international students. As an example, since several years ago, a few Chinese universities such as Hunan International Economics University and Sichuan Tianyi University, have been collaborating with Laureate International University as one of the international leaders in higher education in medical sciences, hospitality management, art, architecture and design. In China, the nine universities known as "The C9" receive supplemental government funding to enhance their global competitiveness and become China's "Ivy League" (Said Irandoust, January 11 2014).

Singapore and South Korea

Stil another example is the experiences of Singapore and South Korea. The two countries, perceived highly innovative Asian economies, underscore the importance of human resource investment. Both Singapore and South Korea have strong and committed governments that proactively set policy and provide incentive to push human capital development. They strongly believe that high-quality human capital is key to maintaining their global

competitiveness and to sustain growth. Even as the political landscape changes, their governments consistently continue investing in education and skills training for their young people. In South Korea, for instance, because of its persistent high human resource investment, the country has a good stock of well-trained human resource professionals. With support from its well-educated and well-trained human capital, Korea has moved away from dependency on technology imports and reverse engineering to become more actively engage in product engineering and product design technology. High spending on research and development (R&D) together with a highly educated workforce with a high degree of interest in S&T and innovation make "technology leapfrogs" possible in this country. The latter has helped transform Korea from being one of the poorest countries in the world to becoming one of the elite members of OECD within less than three decades.The Singaporean government realizes the critical role of human resources and the institutions that prepare future human capital for the country. It tries to build an innovative ecosystem in which higher education institutions play a crucial role not only in providing education and training but also to act as knowledge factories to support industry. The government promotes the creation of R&D facilities, including tech-parks and incubators built using public funds in universities. The goal is to leverage universities as a part of its knowledge infrastructure in order to attract foreign direct investment (FDI) from multinational companies and to generate local knowledge-intensive enterprises.

In both economies, state intervention played a big role in industrial development, including the import or transfer of foreign technology during the catch-up period. However, recently, they have turned to more market-led industrial policy and emphasize indigenous and private sector-driven R&D and innovation. They both are imposing education reform, particularly in higher education, to meet global changes. After first building a critical mass of higher education graduates, Singapore and South Korea emphasize improving the quality of their higher education, which is critical for the advancement of their capacity in R&D and innovation. In addition to universities, government research institutes also play a critical role in diffusing product and process technology to industry. In Korea, for example, the Korean Institute of Science and Technology (KIST) facilitated rapid foreign technology acquisition and adaptation in the 1970s, which helped identify and acquire foreign technologies and assisted Korean firms in adapting and adopting their use. Moreover, the Korean government introduced many initiatives to increase research capacity at universities and strengthen their links with government research institutes. For example, students receive training in multidisciplinary research at universities, participate in research projects at government research institutes, and switch across various government research institutes. In Korea, students are required to take general courses focusing on technology management, research management and planning, technical writing and entrepreneurship. The skills and knowledge they acquire as well as the networks they build prepare them for successful careers in R&D and innovation business. Universities were given a central role in Singapore's transformation into a knowledge-based economy. The government allows greater autonomy and flexibility in university governance. The goal is to allow them to be more productive and entrepreneurial.

The key to Singapore and South Korea's success is that education has always been a top priority. Singapore and South Korea's higher education institutions have developed into world-class research institutions because they have been given more autonomy and flexibility to respond to global changes. Initially, their higher education institutions were only producers

of skilled workers. And now they are being transformed into producers of knowledge. In Singapore, many public universities are given status as independent legal entities to give them greater autonomy and flexibility to work with industry. The government also requires universities to generate a fraction of their total funding from private sources as a condition for receiving public funding. In some cases, the government even cuts public funding to force them to work with industry. Collaboration with industry becomes a criterion for faculty evaluation. The government provides national awards and honors for those who excel in collaborations with industry. Finally, universities are working with industry in course development to better equip students with the knowledge and skills that employers need (Siwage Dharma Negara, August 09 2014).

The Gulf states and India

Next is the experience of the Gulf states, in which hundreds of millions of dollars are being spent to open branches of top US and European universities, such as Cornell in Qatar and the Sorbonne in Abu Dhabi. A few years back, the new King Abdullah University of Science and Technology opened in Saudi Arabia with a US$10 billion endowment fund that exceeds that of all but five American universities. In India, the Education Ministry has announced its intention to build 14 new comprehensive universities of "world-class" stature and the government also recently approved a bill to allow foreign education providers to set up campuses and offer degrees (Said Irandoust, January 11 2014).

Japan

Lastly is Japan experience when its education ministry formulated a policy to promote the further reorganization of national universities by allowing one independent administrative entity to operate several universities in different prefectures. The Education, Culture, Sports, Science and Technology Ministry announced the new policy at the National Strategy Council chaired by Prime Minister Yoshihiko Noda. Under the new system, the ministry expects that only flagship faculties at each university will remain, while other faculties will be eliminated or consolidated. It aims to streamline budgets, facilities and faculty manpower to increase the quality of education, which will foster better human resources. For example, three national universities A,B, and C operated by three separate administrative entities would instead be run by a single entity. Under the new system, each university would be able to specialize in certain fields- University A would only have schools of medicine, science and engineering, while B would have schools for law and economics and C would have departments of literature and education.The ministry plans to formulate basic policies later this fiscal year, while specific plans are expected by the summer of 2013. The ministry plans to submit a bill to revise the National University Corporation Law to the ordinary Diet session in 2014. Because the current law stipulates that one administrative entity can only manage one national university, each prefecture contains universities with various departments. The new system would allow one administrative entity to run multiple universities. As a result, similar departments at universities run by a single administrative entity are expected to be reorganized. So far, reorganization of national universities has only taken place among universities located in the same prefecture, including the integration of Osaka University and Osaka University of Foreign Studies in October 2007 (Asia News Network / The Yomiuri Shimbun), June 05 2012).

ASEAN

Last but not least is the experience of ASEAN countries. Since its inception in 1967, ASEAN has been identified as the most diverse part of the world in various aspects. In terms of religion, for example, Indonesia is a predominantly Muslim country, while Thailand has a Buddhist majority and the Philippines Roman Catholic. In terms of governmental systems, Myanmar is still under military rule; Malaysia is ruled by a constitutional monarchy and Vietnam a communist state. In terms of territory and population, Brunei spans 5,700 square kilometers and is occupied by over 300,000 people, while Indonesia is about 2 million sq km with more than 250 million people. Other differences include languages, with Malay very different from Lao, Thai, Chinese and Tagalog. Therefore, there is still potential for suspicion among the states. In addition, there are persistent economic, social and cultural gaps between and among countries within ASEAN. Inequality also exists internally in each ASEAN member, except Singapore and Brunei. In Indonesia for example, there is still a yawning gap of development between eastern and western parts of the country.Under such circumstances, ASEAN will be a single community of nations by 2015. In the long run, the region will transform into a single political-security community, economic community and socio-cultural community.

To arrive at those three destinations in a single community of nations looks very ambitious. It looks unlikely that ASEAN will be able to emulate a regional community like the European Union anytime soon or the Laureate model mentioned earlier. Such a process could be replicated within ASEAN to speed up the integration of universities to support the region's transformation into a single community by 2015, politically, economically and socio-culturally. ASEAN needs more time for consolidation prior to its transformation into an EU model. EU integration has been greatly supported by its university integration. However, it can be accelerated if ASEAN takes some lessons learned from the EU. One of them is its experiences in integrating its universities. ASEAN may also choose the existing ASEAN initiatives to integrate its universities. The ASEAN University Network (AUN) model, established in November 1995, envisaged to "hasten the solidarity and development of a regional identity through the promotion of human resource development so as to further strengthen the existing network of leading universities and institutions of higher learning in the region."This model offers various programs such as student and faculty exchange, scholarship, ASEAN studies, information networking and collaborative research. The AUN Secretariat is located at Chulalongkorn University in Bangkok and liaises closely with the ASEAN Secretariat in coordinating and implementing regional cooperation activities on higher education.The RIHED model as the Southeast Asian Ministers of Education Organization Centre specializing in regional higher education development, aims to foster efficiency, effectiveness, and harmonization of higher education in ASEAN through system research, empowerment, development of mechanisms to facilitate sharing and collaborations in higher education. RIHED also provides various opportunities for universities to build capacity in the areas of university governance and management, for instance: education programs on University Governance and Management; University Research Management; Quality Assurance, Harmonization of Higher Education; etc. Finally, under the new

administration, hopefully, Indonesia can take a leading role in pushing for the establishment of regional integration of universities toward ASEAN Single Community of Nations by 2015 (Hafid Abbas, August 09 2014).

Indonesian Discourse: Preparing students for employment and internationalisation

The national education system needs to move away from its emphasis on theory and focus more on providing practical skills for students, according to industry and trade representatives. The secretary-general of the Indonesian Employers Association (Apindo), Suryadi Sasmita, said that tertiary education was still too academic and did not equip graduates with the relevant skills for the workplace. According to Suryadi, overseas education provides students the opportunity to enhance their problem-solving skills. According to a 2008 survey distributed to a number of Indonesian employers (Economist Intelligence Unit, The Economist), 'core skills' such as numeracy, literacy and other generic skills and practical experience are perceived to be nearly as important as theoretical knowledge for professionals and the skilled workforce (Said Irandoust, December 09 2013).

In contrast, the Indonesian system champions theoretical instruction. "No wonder the system doesn't match up to industry requirements. Graduates have not been equipped with the skills to tackle problems," Suryadi told The Jakarta Post on Tuesday.Suryadi also said that the higher education system was too general and that there was a lack of specialized schools providing targeted education. "Foreign education is more specific. Once someone enters a certain field, they tackle all the issues from A to Z," said Suryadi, a member of the National Tripartite Manpower Section, adding that such specialized education was the reason foreigners were often preferred over local talent.Suryadi expressed concern over the issue of linking higher education to industry demand, and offered one concrete solution. "The Education and Culture Ministry should approach professionals and ask them about their requirements," he said.

The education sector should take note that in the absence of market-oriented university curriculums, many companies in emerging countries have to spend significant resources to operate state-of-the-art facilities for training employees, as evidenced by Infosys which recently inaugurated their Global Education Center-II in India. As a consequence, beside the quiet usual project like a new US$ 90 million ADB project for Vietnam intended to strengthen the teaching of biology, chemistry, mathematics, physics and social sciences should close the labor gaps and help the growing country's young people attain the skills needed in the job market (Said Irandoust, October 19 2013), the education sector should look to emulate the kind of training that companies like Astra or Citibank give to entry-level employees."It is because people are left to their own devices that they don't know how to learn."According to Suryadi, education officials should visit companies in the same vein as inactive Jakarta Governor Joko "Jokowi" Widodo's blusukan (impromptu visits).When asked about the chances that local graduates have in the lead-up to the ASEAN Economic Community (AEC), Suryadi said that there was still hope."Foreigners, like the Japanese, rely on teamwork. If they were pitted one-on-one against an Indonesian, we would surely win," Suryadi said. If, on the other hand, the two competed in teams, Indonesians would surely lose because of a tendency to not share knowledge, he implied."Indonesians are all about ego. We have to change that. This is what I think Jokowi meant with his mental revolution," the steel magnate said.

Suryadi said that there was another flaw in the education system; graduates were not taught to adapt to different systems. He recommended mandatory apprenticeships in every field of study, to ease students into the workforce. Apprenticeships should also match the field of study, and that state-owned enterprises should provide such opportunities. “If you look to the private sector, they only think of efficiency,” he warned. According to Suryadi, the first to bear the brunt of the AEC’s effect will be those in middle management positions.Meanwhile, in anticipation of the AEC in 2015, the Manpower and Transmigration Ministry has given special attention to the education and vocational training system so as to improve the competence and competitiveness of Indonesia’s workforce.“The education and training systems should link up to improve job competence so as to answer the needs of the labor market, expanding employment opportunities and fostering new entrepreneurs,” said Manpower and Transmigration Minister Muhaimin Iskandar, in a written address on Sunday, June 1.

On the minister’s behalf, Khairul Anwar, the director general for training and productivity, said that the two systems would be able to develop highly competent human resources with the skills, professionalism and competences relevant to the needs of the workforce.“The AEC is on the horizon, and as the nation with the largest potential of human and natural resources in the ASEAN region, this should be viewed as an opportunity to improve the welfare of the people,” said Khairul, as quoted in a press release on the ministry’s website. According to Khairul, one key factor the government needed to address was to empower all educational institutions in producing a competent and professional workforce.The director general said that the Manpower and Transmigration Ministry would be developing Indonesian Working Competency Standards (SKKNI) together with all government sectors.The SKKNI functions as a reference in developing education and training programs and a certification for working skills, as well as helping with the recruitment of employees (The Jakarta Post, June 11 2014).

SKKNI, however, will not only concern about the education and vocational training system, but could also affect all of the education sector, including and especially when we talk about higher education and its future trend of internationalisation. Internationalizing the higher education system could potentially be a large step in moving the Indonesian education system toward a more global scope. Article 90 of the Higher Education Law states that foreign universities can operate in Indonesia if they are accredited in their country of origin, collaborate with local universities, of a non-profit orientation, support national interest and prioritize the appointment of Indonesian citizens as faculty staff. Despite of the controversy about the law, Indonesian higher education is now moving forward and indeed is gaining great momentum for internationalization. Hopefully this step is the point of no return (Hafid Abbas, October 27 2012).

According to William Xue, SE, MM, a lecturer in corporate finance management at Atma Jaya Catholic University, “My concern is not for the establishing phase. It lies with getting the right curricula that can improve the quality of our existing education… We need to utilize better information & technology, to apply skills in mentoring rather than merely lecturing students, and to improve the curriculum (so as not to put too much emphasis on rote learning).” “An international certificate drafted by a foreign university can be more valuable than that of a local university. However, not all foreign universities offer a good curriculum.

So, it is the government's job to select the ones that serve the long-term goals of producing better graduates in Indonesia." Prof. Dr. Winarno, the former rector of Atma Jaya Catholic University, has an innovative view: he believes that Indonesia should consider utilizing the country's biodiversity aspects as one of many means with which to build a better higher education system (Aulia R. Sungkar, Contributor, August 14 2012).

Beside problems related to curriculum, one of the inherent prerequisites to internationalization of higher education is to accelerate an improvement to its basic parameters, such as 6,000 unaccredited or illegal study programs (Kompas, Feb. 17, 2010), only 6-7 percent of some 17,000-18,000 study programs accredited excellent, 42 percent of all lecturers unqualified (undergraduate degrees) and lastly, dual management, such as the ministries of Education and Culture and Religious Affairs. Also, accessibility to public higher education institutions needs to be urgently increased. Currently, there are 5.8 million students - about 19.9 million aged 19-23 years- attending the country's 92 state universities and 3,176 private ones, from polytechnics to universities. Only 22 percent of the college-age population is currently enrolled in a college in Indonesia, a lower percentage than in all of the BRIC nations except India. The Education and Culture Ministry statistics (2011) show that the gross enrollment rate of tertiary education has reached 27.1 percent. In comparison, the number of higher education students in 2012 reached up to 4.27 million people with a growth rate of 1.7 percent every year. Lastly, through step-by-step compensation, the phasing out of some 1,000-2,000 under qualified private education insititutions needs to take place. Just a comparison, China with its 1.34 billion population has only some 2,263 higher education institutions (Fact about China Education, 2011), while Indonesia, four to five times smaller than China, has more than 3,000 private institutions (Hafid Abbas, December 31, 2011).

To sum up

The challenges to internationalization is quiet appealing, not to be easily dismissed as irrelevant. Despite of the appeal, we face several general issues like underfunding, inequality, low productivity, etc.Not much yet time and effort to resolve such issues. We could take a good look to what others had experienced, but we should realize that those experiences cannot be easily replicated here and now. In the higher education institutions itself, several agenda need to be soon addressed. In taking several comparative study among similar or the same study programs in Indonesia, it could be found that each has its own characteristics as well as its similar problematic, while at the time same each shares several same courses, not to mention each has quiet similar prospect in terms of internationalization and of other missions.

So far, we have examined in a broad manner cultural issues, resource concerns, and other factors that may impinge on the planning process. However from such 'scanning', we could identify several critical stakeholders, with particular attention to their expectations for the plan's development and implementation. They are:

- The now ministry of research and higher edcucation which had contributed to the formulation of IQF (SKKNI) organized by the then Manpower and Transmigration Ministry. IQF might intensely reconsidered and watched by the now Manpower Ministry. But, we cannot wait for such reconsideration to reach its final conclusion especially when it is only a matter of days that AEC 2015 begins.
- Educational institution like AUN, SEAMEO-RIHED, UNESCO, etc. which have

significant impact in and fundings for our future implementation of IQF.
- IQF team at UT level and PFIS FKIP-UT teacher-students who might benefit or risk by the implementation of IQF.

Moreover, as the self-study progress, potential partner and occasion come along. One worthy to be mentioned is the network of about 19 universities in Indonesia (about 16 university, one of which is Universitas Tirtayasa) and one university in Malaysia, Saudi Arabia and Australia coordinated jointly. The occasion mentioned referred to what in Appendix2 coined as P2TPAP/APELSM I.

- **Goals, Areas Evaluated, Standards, Strategies and Action Plans**

Having elaborated and agreed on the expectations of critical stakeholders and their environmental situations, it now time for PFIS FKIP-UT to identify aspirations in tangible, achievable, and measurable terms. As mentioned before, both at the UT and Faculty level, the concerns are to adapt -or at least to position it in a strategic manner- the current curriculum to requirement of IQF/SKKNI. The following is how goals are translated into a series of concrete strategies and activities - that is comprehensive, yet easily understood.thing- with their respective timelines.

Steps of adapting curriculum to IQF requirement

- **Outcomes and Achievements**

In this stage, the study monitor progress and, most importantly, evaluate outcomes. To do so, it must firstly be that while the work done at the UT and faculty level is not finished yet, PFIS FKIP-UT search for standard likely most relevant for IQF related works. While

at UT level, it is not yet t yet due to the fact that it only slowly triggers to the need of IQF, at faculty level, the 10 diferrent study program hardy achieves yet a relevant common view almost about anything from the statement of vision and mission down to profiles of graduate (profil lulusan). As can be seen in the above description and in appendix1, 3 and 4, PFIS FKIP-UT has already have a broad ideas about what are the general direction of PFIS FKIP-UT now and in the future. It has as well formulated graduate profile and grouping of courses likely needed to achieve such profile. Not to mentioned the priority of courses to be adapted to IQF requirement.

Conclusion and Recommendations

It can be concluded that the current study have achieved much that are possible. However, it is not yet possible at this stage to mention how far or how close our curriculum to the required form guided by IQF. There are certainly much work to do. Thus, it is recommended that a more concerted effort in 2015 should be carefully planned and implemented.

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Appendix1

Profil Lulusan PFIS FKIP-UT

Komp	S1	Profesi	S2	S3	UU-plus
Khusus **Utama**	Mampu mengaplikasikan bidang keahliannya dan memanfaatkan ilmu pengetahuan, teknologi, dan/atau seni pada bidangnya dalam penyelesaian masalah serta mampu beradaptasi terhadap situasi yang dihadapi. *(Knowledge-Skills) – Kemampuan bidang kerja* Menguasai *konsep teoritis* bidang pengetahuan tertentu secara *umum* dan *konsep teoritis bagian khusus* dalam bidang pengetahuan tersebut secara *mendalam*, serta mampu memformulasikan penyelesaian masalah *prosedural*. *(Knowledge-Skills) – Pengetahuan yang dikuasai* Mampu mengambil keputusan yang tepat berdasarkan analisis informasi dan data, dan mampu memberikan	Mampu memecahkan permasalahan sains, teknologi, dan atau seni di dalam bidang keilmuannya melalui pendekatan monodisi-pliner Mampu melakukan riset dan mengambil keputusan strategis dengan akuntabilitas dan tanggung jawab penuh atas semua aspek yang berada di bawah tanggung jawab bidang keahliannya. Mampu merencana-kan dan mengelola sumber-daya di bawah tanggung jawabnya, dan mengevaluasi secara komprehensif kerjanya dengan memanfaat-kan IPTEKS untuk menghasilkan langkah-langkah pengembangan strategis organisasi (KKNI 123 → 231)	Mampu memecahkan permasalahan sains, teknologi, dan atau seni di dalam bidang keilmuannya melalui pendekatan inter atau multidisi-pliner . Mampu mengelola riset dan pengembangan yang bermanfaat bagi masyarakat dan keilmuan, serta mampu mendapat pengakuan nasional maupun interna-sional. Mampu mengembangkan pengetahu-an, teknologi, dan atau seni di dalam bidang keilmuannya atau praktek profesionalnya melalui riset, hingga menghasilkan karya inovatif dan	Menguasai filosofi pendidikan fisika, perkembangan keilmuan fisika spesifik terkini (*State of the art)*(mipanet) Mampu memecahkan permasalahan sains, teknologi, dan atau seni di dalam bidang keilmuannya melalui pendekatan inter, multi atau transdisipliner. Mampu mengelola, memimpin, dan mengembangkan riset dan pengembangan yang bermanfaat bagi ilmu pengetahuan dan kemaslahatan umat manusia, serta mampu mendapat pengakuan nasional maupun internasional. Mampu mengembangkan pengetahuan, teknologi, dan atau seni baru di dalam bidang	**KOMPETENSI PEDAGOGIK** 1. Merencanakan, mengembangkan dan menyelenggarakan pembelajaran dan kurikulum yang terkait dengan bidang pengembangan yang diampu serta sesuai kompetensi (KI-KD) mata pelajaran yang diampu, teori dan prinsip-prinsip pembelajaran yang mendidik serta dengan teknologi pendidikan yang tepat serta menyelenggarakan evaluasi proses dan hasil belajar serta lewat tindakan reflektif memanfaatkannya untuk peningkatan kualitas pembelajaran). 2. Pemecahan Masalah dan Pengambilan Keputusan: Kemampuan mengidentifikasi masalah, mengimplementasikan solusi (mengambil keputusan dari berbagai alternatif yang mungkin) dan memetakan penanganan konsekuensi dari solusi yang diambil (termasuk pemecahan permasalahan dan pengambilan keputusan dalam berbagai persoalan pembelajaran fisika dan pengembangan petensi peserta didik). 3. Memotivasi, membimbing dan mengelola interaksi dan komunikasi edukatif-berkarakter (efektif, empatik dan santun) baik di lingkungan sekolah maupun di luar lingkungan sekolah, sehingga pengembangan potensi peserta didik (yang tidak berkebutuhan khusus maupun yang berkebutuhan khusus atau berbakat dan berbeda kemampuan/*diffable*) terfasilitasi dan aktualisasikan aspek fisik, moral, sosial, kultural, spiritual, emosional, dan intelektualnya. **KOMPETENSI KEPRIBADIAN dan PROFESIONAL** 4. Memiliki kemampuan dan kesempatan untuk mengembangkan keprofesionalan secara reflektif dan berkelanjutan dengan penelitian dan belajar sepanjang hayat melalui atau tidak melalui organisasi profesi yang mempunyai kewenangan mengatur hal-hal yang berkaitan dengan tugas keprofesionalan. a. Belajar Sepanjang Hayat: Memahami diri (*self-awareness*) untuk merencanakan pembelajaran mandiri (*self-management*) dan mempraktekan bagaimana belajar (*meta-learning*) dan mengevaluasi pembelajaran mandiri (*self-monitoring*). b. Kemampuan Belajar Hal Baru: Meningkatkan pencapaian kompetensi seiring dengan perkembangan keilmuan dan kemasyarakatan. c. Memiliki jaminan perlindungan hukum dan penghargaan dalam melaksanakan tugas keprofesionalan serta memperoleh penghasilan yang sesuai dgn prestasi kerja

Komp	S1	Profesi	S2	S3	UU-plus
	petunjuk dalam memilih berbagai alternatif solusi secara mandiri dan kelompok. *(Knowledge,Skills, Attitude) – Kemampuan manajerial* Bertanggung jawab pada pekerjaan sendiri dan dapat diberi tanggung jawab atas pencapaian hasil kerja organisasi. *(Attitude) – Kemampuan manajerial*		teruji (Mampu mengembangkan secara ilmiah multimodel, multimetode dan atau multimedia efektif dan inovatif untuk diterapkan dalam pembelajaran fisika, *mipanet*) (KKNI 123 → 231)	keilmuannya atau praktek profesionalnya melalui riset, hingga menghasilkan karya kreatif, original, dan teruji. (KKNI 123 → 231)	serta mempunyai kewenangan dan kewajiban untuk mengarahkan, mensupervisi dan mengases rekan junior dalam dalam praktek profesional. 5. Keterampilan Menilai Kritis (*Critical Appraisal Skills*): Keteramplan memeriksa secara cermat dan sistematis berbagai objek dan gejala peristiwa (fisikal dan non-fisikal) untuk menetapkan rincian karakateristik/proses, makna dan relevansinya dalam suatu konteks tertentu (*carefully and systematically examining object/process to judge its trustworthiness, and its value and relevance in a particular context*). Dalam pendidikan ilmu fisika, keterampilan menilai kritis dicapai melalui: a. Memiliki kualifikasi akademik dan latar belakang pendidikan sesuai sehingga terwujud dalam kompetensi pengetahuan, pemahaman dan eksplorasi konsep dalam pembelajaran, pendidikan dan ilmu fisika (profesi: monodisipliner, S2: inter atau multidisipliner, S3: inter, multi atau transdisipliner) b. Budaya Ilmu dan Pendidikan Fisika: Menganalisis dan menyelesaikan permasalahan fenomena alam serta pembelajarannya sesuai dengan konsep-konsep ilmu dan pendidikan fisika. c. Kemampuan analisis dan sintesis: kemampuan/ kapasitas merinci dan mengurai data-fakta yang tersedia (analisis) untuk menetapkan nilai dan relevansinya (sintesis) menggunakan argumen ilmiah, logis dan sistematis. d. Keterampilan Estimasi: Memperkirakan konsep yang digunakan sesuai tingkat kompleksitas permasalahan dan sekaligus memperkirakan solusi permasalahan serta konsekuensi dari solusi. e. Keterampilan Matematis: Melakukan penalaran permasalahan fisika melalui analisis empiris, kalkulasi numerik, manipulasi aljabar, visualisasi ruang dan argumen statistik/probabilistik. f. Menerapkan berbagai alat, bahan, media dan teknologi pendidikan yang tepat guna dalam pembelajaran untuk berkomunikasi dan mengembangkan diri (termasuk keterampilan eksperimen dan rekayasa: atas dasar masalah dan data, merumuskan hipotesis dan melakukan eksperimen untuk menguji hipotesis atau membuat rancangan alat sederhana dan menguji ketepatgunaannya). 6. Memiliki kepribadian yg mantap, stabil, dewasa, arif, berwibawa, jujur, berakhlak mulia, dan teladan baik di lingkungan sekolah maupun di luar lingkungan sekolah serta memiliki bakat, minat, panggilan jiwa, rasa bangga menjadi guru, komitmen, etos kerja, dan tanggungjawab untuk meningkatkan mutu pendidikan, keimanan dan akhlak mulia.

Komp	S1	Profesi	S2	S3	UU-plus
					KOMPETENSI SOSIAL 7. Menjunjung tinggi komitmen, etos kerja dan bertindak sesuai dengan kode etik profesi kependidikan, etika ilmiah, norma agama, hukum, sosial, kebijakan dan kebudayaan nasional Indonesia 8. Berkomunikasi (mendengarkan dan menyampaikan) secara efektif, empatik, dan santun dengan sesama pendidik, tenaga kependidikan, orang tua/wali peserta didik, dan masyarakat secara verbal dan non-verbal, tertulis atau lisan, personal atau publik, sesuai situasi, media dan etika yang berlaku (Termasuk keterampilan presentasi: menyajikan pesan otentik dengan tegas, tenang, dan bermakna sehingga terbangun relevansi dan kredibilitas pesan). 9. Bekerja secara individual dan tim serta beradaptasi/fleksibel di tempat bertugas di seluruh wilayah Indonesia yang memiliki keragaraman sosial budaya sehingga terdapat pengembangan diri dan sinergitas dalam kerja tim (*team-work*) sembari memelihara dan memupuk persatuan dan kesatuan bangsa (inklusif dan tidak diskriminatif karena pertimbangan jenis kelamin, agama, ras, kondisi fisik, latar belakang keluarga, dan status sosial ekonomi).

Nb. 1) Undang-Undang Nomor 14 Tahun 2005 tentang Guru dan Dosen, pada pasal 10 ayat (1) menyatakan bahwa"Kompetensi guru sebagaimana dimaksud dalam Pasal 8 meliputi kompetensi pedagogik**,** kompetensi kepribadian**,** kompetensi sosial**,** dan kompetensi profesional yang diperoleh melalui pendidikan profesi", 2) bertanda merah: rumusan dari MIPANET, 3) bertanda hijau: letak perbedaan pokok berbagai jenjang/level KKNI

Appendix2

Pertemuan Puncak Tokoh Pendidikan Asia Pasifik (P2TPAP)
Asia Pacific Education Leader Summit Meeting (APELSM I):
Challenges of ASEAN Economic Community to Education
November 2015

Rationale

Ever since the year of 2015, ASEAN Economic Community (AEC) is the reality in ASEAN countries which certainly has highly significant impact not only to the participant countries, but also to its neighboring countries in Pacific area. AEC, for sure, changes the ways of how economy is conducted. But as economy change, every other area -including our education world- change as well. AEC could have significant influences on how our schools and our higher education should be reformed. In a similar ways, our 'community' or 'government', our ways of approaching all the changes of lifestyles in local, national and regional level would momentously be different from our old ways. The year of 2015 is the stepping stone whether or not our future is mapped out as we hoped it to be.

Certainly, AEC has been agreed upon with some grand vision ahead. No doubt can now made as to its feasibility. The year of 2015, then, is not only our stepping stone to our future, it is also our testing ground of how far our own expectation is substantiated. So, crucial is the year of 2015 that somebody somewhere in education world and elsewhere has to do something. Indonesia which has the largest population in Asia-Pacific understandably is most anxious to respond as soon it can to such situation. Thus, APELSM is –is hoped to be- one of the continuing efforts to begin to understand –and if possible to gain firm direction of- our future education world at least in Asia Pacific. The theme of the first APELSM (APELSM I) is **Challenges of ASEAN Economic Community to Education.**

Agenda

Main purposes of the meeting is to elaborate urgent agenda of Asia Pacific contries in facing the era of AEC. Several specific focuses are to discuss deeply issues concerning the follwowings.

a) Benchmarking accreditation procedure especially as related to each countries education qualification framework (EQF).
b) Inter-connecting the implications of AEC with our education world.
c) Seeking working models of educational parternship and action among countries.

It is in addressing such agenda that Universitas Terbuka (UT) in partnership with several other universities and/or institution –governmental or otherwise- proposed that several representative from Asia Pacific education leader to conduct APELSM. APELSM is to be attended by education leader and institution committed to a better education, especially as it is affected

by AEC. The contribution, educationally as well financially speaking, will be considered and agreed upon proportionally.

Proposed Activities

APELSM I is to be conducted in two days Education Leader Summit Meeting on week III-IV of November 2015, followed by Key Note Speaking in National Indonesia Teacher Annual Meeting VIII (NITAM VII).

NITAM is an annual agenda of the Republic of Indonesia Ministry of Education delegated to UT to commemorate Teacher Day on every 25th of November ever since 2009. The participants of NITAM is about 500 to 1100 participants from all over Indonesia and a few selected Asia Pacific countries. NITAM in a glance (date, theme, participants) are as follows.

1. NITAM I 2009, 7 Agustus 2009, *Teachers' Professionalism for Quality Teaching and Learning: Sharing Excellence and Lesson Learnt*), Education Officer, Teachers, Scholars, Participants from ASEAN Countries.
2. NITAM II 2010, 24-25 November 2010, *Building Character and Culture-Based Teacher Professionalism*, Prof. DR. Fasli Jalal (Vice Minister of Education Ministry) on behalf of the Ministry of Education, Prof. Dr. H. Arief Rachman, M.Pd., Ratna Megawangi, Ph.D. , Dr. Seto Mulyadi, Psi., M.Si., Education Officer, Teachers, Scholars.
3. NITAM III2011, 23 November 2011, *Teaching Perspectives in Multicultural Society*, Prof. Dr. Ir. KH. Mohammad Nuh, DEA (Minister of Education), Prahastoeti Adhitama, Prof. Dr. Komarudin Hidayat, Education Officer, Teachers, Scholars.
4. NITAM IV 2012, 24 November 2012, *Empowering Teacher and Local Wisdom in Globalization of Education*, General Director of Higher Education (Prof. Dr. Supriadi Rustad, M.Si.) on behalf of the Ministry of Education, General Director of Early Education (Prof. Dr. Lidya Freyani Hawadi, Psi.), Prof. H. Arief Rachman, M.Pd. Education Officer, Teachers, Scholars.
5. NITAM V 2013, 23 November 2013, *Innovation in Teaching for Indonesia Golden Generation*, Dr. Graham Dawson, *Consultant for Education Quality AusAID Education Partnership SSQ (School Systems and Quality)*, Education Officer, Teachers, Scholars.
6. NITAM VI 2014, 29 November 2014, *Curriculum 2013 to Build Education Indonesia Golden Generation*, Prof. Dr. Syawal Gultom (Head of the Office of Human Resources Development and Qualitu Assurance of Education) on behalf of the Ministry of Education Officer, Prof. Dr. Djaali (Rector of Universitas Negeri Jakarta), Teachers, Scholars.
7. NITAM VII 2015, proposed on week III-IV of November 2015

Proposed Place

Universitas Terbuka Convention Centre (UTCC), Pondok Cabe, Pamulang, Banten 15418.

UT in a glance:
Established in 4 September 1984 by President of the Republic of Indonesia Decree No. 41, 11 June 1984. Since 1985, UT has four faculty: Facultu of Education, Faculty of Econimics, Faculty of Social-Political Science, and Faculty of Math. And Science. In 1989, UT has more

than 140.000 students, and it has in 1998 about 400.000 students. In 2003, 449.981 alumni out of total 559.449 alumni comes from Faculty of Education. In 2013, 544.225 alumni out of total 1.315.009 alumni comes from Faculty of Education,while its students body, 267.460 students out of 350.167students comes from Faculty of Education.

Several Scholar Expected to Attend APESM:

Stephen Kemmis, skemmis@csu.edu.au, BA, MEd, PhD, Ed D (honoris causa), PhD (honoris causa), RIPPLE Research Leader (part time) and Adjunct Professor,
Campus Wagga Wagga, Building 29, Room 125
Phone/Fax (02) 6933 4925
Stephen Kemmis is Research Leader (part-time) and Adjunct Professor at the Research Institute for Professional Practice, Learning and Education, Charles Sturt University, Wagga Wagga. He is also co-leader of the 'Pedagogy, Education and Praxis' (PEP) international collaboration involving researchers from universities in Colombia, Finland, the Netherlands, Norway and Sweden. Stephen has held academic positions at the University of Sydney, University of Illinois, University of East Anglia, Deakin University and the University of Ballarat and also worked for several years as an independent consultant. He has published extensively on professional practice, indigenous education, participatory action research and qualitative methods in educational research. His most well-known publication is the highly acclaimed book (with Wilfred Carr) *Becoming Critical: Education, knowledge and action research*. In 2001 Stephen was made an Honorary Life Member of the Australian Association for Educational Research (AARE), and in 2009 he was awarded two honorary doctorates for services to international educational research. Stephen teaches postgraduate students in the subject "Understanding professional practice" in the Doctor of Education course. Stephen has also supervised numerous Masters and PhD students on topics including praxis in education, education for sustainability, rural education and Indigenous education. Stephen is interested how professional practices are formed and how they are transformed as they unfold in the professional practice of individuals and in the collective social practice of groups – for example, the practices of the education profession. His work focuses on educational practices in schools and universities. He has published extensively on critical participatory action research as an approach to educational research; this interest is now focused on researching practice traditions 'from within'. With colleagues in the "Pedagogy, Education & Praxis" (PEP) national and international research groups, he is also developing a theory about what practices are made of (the theory of practice architectures) and a theory about how different practices relate to one another (the theory of ecologies of practices).

Robin McTaggart, Robin.McTaggart@jcu.edu.au, Adjunct Professor, BSc, DipEd, MEd (University of Melbourne), PhD (University of Illinois)
Professor McTaggart is internationally recognised for his research in Education, particularly his research into action research as a conceptual, epistemological, political and methodological field. Professor McTaggart brings a wealth of experience in teaching and learning, and in research and program evaluation to the School.
Selected Career

- 1976 – 1979 Lecturer, Deakin University
- 1993 – 1995 Head of School of Administration and Curriculum Studies (Professor), Deakin University

- 1996 – 1997 Director of International Programs Faculty of Education, Deakin University
- 1998 Professor and Executive Dean Faculty of Law and Education, James Cook University
- 1999 Professor and Executive Dean Faculty of Education and Indigenous Studies, James Cook University
- 2000 – 2005 Pro-Vice-Chancellor Staff Development and Student Affairs, James Cook University
- 2006 – 2007 Pro-Vice-Chancellor Student Services and Quality Assurance, James Cook University

Honours and Awards

- W.F. Connell Fellowship – University of Illinois, 1984
- Lansdowne Visitor – University of Victoria, Canada, 1991
- George Sanders Chair Visitor – Hamline University, Minnesota, 1994
- Life Member – Australian Curriculum Studies Association, 1998

Appendix3

Pencapaian Mahasiswa Terkait dan Persepsi Dosen PFIS FKIP UT tentang Tingkat Kesukaran BMP

No	Kode MK	Nama Matakuliah Non Praktek/um	TK	Alasan/Keterangan	Alasan/Keterangan	Alasan/Keterangan	Prio-ritas
1	PEFI4201	Strategi Pembelajaran Fisika	1.6	pedagogi terapan	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
2	PEFI4327	Materi Kurikuler Fisika SMP	1.6	terapan	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
3	PEFI4405	Pemb dalam Pemb Fisika	1.9	pedagogi terapan	mempelajari konsep-konsep dasar	agak sulit, krn sdh mulai banyak perhitungannya	1
4	PEFI4302	Evaluasi Pembelajaran Fisika	2.1	pedagogi terapan	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	1
5	PEFI4303	Pengemb Kur dan Pemb Fisika	2.1	pedagogi terapan	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	1
6	PEFI4101	Fisika Dasar 1	2.3	umum	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
7	PEFI4424	Biofisika	2.4	terapan	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	1
8	PEFI4103	Ilmu Pengetahuan Bumi dan Antariksa	3.5	umum	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
9	PEFI4205	Alat & Metode Pengukuran	3.5	umum	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
10	PEFI4102	Fisika Dasar 2	3.8	umum	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
11	PEFI4206	Elektronika	3.8	umum	banyak menggunakan rumus	cukup mudah, krn masih pengetahuan dasar	1
12	PEFI4204	Mekanika	3.9	umum	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
13	PEFI4316	Fisika Terapan	4	terapan	mempelajari konsep-konsep dasar	cukup mudah, krn masih pengetahuan dasar	1
14	PEFI4425	Materi Kurikuler Fisika SMA	4	terapan	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	1
15	PEFI4315	Pengantar Fisika Zat Padat	4.2	pengayaan	banyak menggunakan rumus	cukup mudah, krn masih pengetahuan dasar	2
16	PEFI4311	Optika	4.2	umum	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
17	PEFI4313	Pengantar Fisika Statistik	4.2	pengayaan	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
18	PEFI4208	Termodinamika	4.4	umum	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
19	PEFI4421	Fisika Atom	4.5	pengayaan	mempelajari konsep-konsep dasar	agak sulit, krn sdh mulai banyak perhitungannya	2
20	PEFI4525	Teori Relativitas	4.5	pengayaan	banyak menggunakan rumus		2
21	PEFI4207	Listrik Magnet	4.8	umum	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
22	PEFI4418	Fisika Statistik	4.6	pengayaan	banyak menggunakan rumus	agak sulit, krn sdh mulai banyak perhitungannya	2
23	PEFI4419	Fisika Kuantum	4.6	pengayaan	banyak menggunakan rumus	agak sulit, krn sdh mulai banyak perhitungannya	2
24	PEFI4422	Fisika Inti	4.7	pengayaan	mempelajari konsep-konsep dasar	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
25	PEFI4310	Gelombang	5.5	umum	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
26	PEFI4312	Fisika Matematika	5.9	pengayaan	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2
27	PEFI4420	Fisika Zat Padat	6.1	pengayaan	banyak menggunakan rumus	agak sulit, krn sdh mulai banyak perhitungannya	2
28	PEFI4314	Pengantar Fisika Kuantum	6.3	pengayaan	banyak menggunakan rumus	agak sulit sedikit, krn sdh mulai banyak perhitungan	2

No	Kode MK	Nama Matakuliah Praktek/um		Alasan/Keterangan	Alasan/Keterangan	Alasan/Keterangan	Prioritas
1	PEFI4304	Pemantapan Kemampuan Mengajar	1.5	praktek/um	masalah di PBM	cukup mudah, krn masih pengetahuan dasar	1
2	PEFI4501	Pemantapan Kemampuan Profesional	3	praktek/um	mencari daftar pustaka	cukup mudah, krn masih pengetahuan dasar	1
3	PEFI4417	Praktikum Fisika 2	4	praktek/um	alat dan bahan kadang2 tidak ada	cukup mudah, krn masih pengetahuan dasar	1
4	PEFI4500	Tugas Akhir Program	4	praktek/um	masalah di PBM	cukup mudah, krn masih pengetahuan dasar	2
5	PEFI4309	Praktikum Fisika 1	5.3	praktek/um	alat dan bahan kadang2 tidak ada	cukup mudah, krn masih pengetahuan dasar	2

TK = tingkat kesukaran diambil dari 40% persepsi dosen, 30% dari pencapaian mahasiswa mu 2012.1, 30% mu 2012.2

Appendix4

Struktur Kurikulum PFIS FKIP-UT