

Promoting Innovation Pedagogy in a Capacity Building Project in Indonesia

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Abstract—This study presents a project that tests and adjusts active European learning and teaching methods in Indonesian universities to increase their external impact on enterprises and other organizations; it also assesses the implementation of the Erasmus+ projects funded by the European Union. The project is based on the approach of innovation pedagogy that responds to regional development needs and integrates applied research and development projects into education to create capabilities for students to participate in development work after graduation. The assessment of the Erasmus+ project resulted in many improvements that can be made to achieve higher quality and innovativeness. The results of this study are useful for those who want to improve the applied research and development projects of higher education institutions.

Keywords—Higher education, innovations, project management, networks.

I. INTRODUCTION

A general challenge in networked projects is the difficulty in defining the objectives to which the participating organizations are able to commit. The additional funding from the Erasmus+ Programme of the European Union has created incentives for the participating organizations to define the joint objectives to enable cooperation. The higher education institutions and other participating organizations have successfully adapted their strategies to the external funding from the Erasmus+ Programme. The joint implementation of the Erasmus+ Programme is also a systematic approach to harmonize the processes of the participating organizations.

The mission of higher education institutions is to provide education and research, and the aim of the third mission is ensure that their institutions produce important and positive impacts on their regions and society [1]. The mission of the institutions is aligned with the aims of the European Union, which uses financial tools to motivate participating organizations in research and development projects. In addition to supporting its member countries, the European Union also supports Partner Countries outside Europe. The Erasmus+ Programme enhances the opportunities for cooperation and mobility with Partner Countries, notably in the fields of higher education and youth.

The Capacity Building projects in the field of higher education disseminate European innovative thinking and expertise in the Partner Countries of the European Union to boost the international trade and investments, which are the instruments of economic growth. The projects targeted to Partner Countries support their enterprises that expect to meet

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foreign employees trained in the European manner to promote collaboration with European enterprises. Many of the Partner Countries have little experience in innovation and industrialization, but these important activities can be supported by the applied research and development projects of the higher education institutions in Europe.

The purpose of this study was to present a project entitled ‘Modernizing Indonesian Higher Education with Tested European Pedagogical Practices (INDOPED)’, the aim of which was to test and appropriately adjust European teaching and learning methods in Indonesian universities. The study also assesses the implementation of the Erasmus+ Programme. The project disseminates, especially innovation pedagogy [2]-[4] that aims at improving the transfer of learning [5], [6] and can be used to create innovation competencies and strengthen the external impact of Indonesian universities. The study also presents the assessment of the Erasmus+ project to enhance their implementation and outcomes. The results of this study can be used to improve the project proposals and the implementation of the Erasmus+ Programme.

The INDOPED project is funded by Key Action 2 of the Erasmus+ Programme of the European Union. The Erasmus+ Programme includes “Key Action 1, Learning mobility of individuals,” “Key Action 2, Cooperation for innovation and the exchange of good practices,” “Key Action 3, Support for policy reform,” “Jean Monnet Activities,” and “Sport.” Key Action 2 includes the following actions: 1) Strategic Partnerships, 2) Knowledge Alliances, 3) Sector Skills Alliances, d) Capacity Building in the field of higher education, and e) Capacity Building in the field of youth. The Erasmus+ Programme contributes to the Europe 2020 strategy of the European Union, which aims to achieve smart, sustainable, and inclusive growth.

The remainder of this study is set out as follows. The next chapter describes the literature review that describes innovation pedagogy to promote the external impact of higher education institutions. The Section III presents the data and methodology of the INDOPED project. The following section includes the results, discussion, and assessment of the INDOPED project and the implementation of the Erasmus+ Programme. The concluding comments are presented in the final section.

II. LITERATURE REVIEW

The Innovation Union of the European Union underlines the importance of innovations in all sectors of the economy. Enterprises need innovations to create competitiveness, and the public sector needs innovations to produce high quality

and cost-efficient services. Competitive economies need more individuals who are capable of participating in innovation processes. Effective participation in innovation processes requires innovation competence, which challenges higher education institutions to enhance their education programs.

The theoretical background of this study utilizes the concept of innovation pedagogy, which was developed in the management team of the Turku University of Applied Sciences [7]. Innovation pedagogy takes into account the stipulations, rules, and pedagogical approaches of the universities of applied sciences. Innovation pedagogy can be used to implement the European 2020 strategy and the Erasmus+ Programme, because both of them aim to boost economic growth and innovations.

The roots of innovation pedagogy are based on socio-cultural theory and the constructivist view of learning developed to encompass the social and cultural customs of a particular community and its ways of operating [8], [9]. Innovation pedagogy redefines how knowledge is absorbed, produced, and used to strengthen the innovation competence of students. Students are able to gain skills in practical training and project studies so they can participate effectively in innovation processes after graduation. Students participate in the private and public sectors' innovation processes at the national and international levels. The active participation of students in real research and development projects gives students more possibilities to enhance their competencies in real, working-life situations. Students learn when they interact with each other and their superiors in research and development projects.

Innovation pedagogy was developed to improve the external impact of higher education institutions. Innovation pedagogy is an approach that is used in higher education institutions to outreach and engage with regional development [2]. Innovation pedagogy is essentially based on the mission of the universities of applied sciences to promote regional development. The institutions respond to the development needs of the enterprises and other organizations in their regions. The development needs of enterprises and other organizations typically are multi-disciplinary, and they do not follow the limits of degree programs or subjects. The multi-disciplinary approach of applied research and development projects is consistent with the Erasmus+ Programme Guide, which emphasizes the importance of cross-fertilization between the different fields of education.

Higher education institutions apply project funding for research and development from the Erasmus+ Programme and other funding sources. Whenever it is possible and reasonable, the institutions integrate the projects into education so that students can participate in real research and development projects and learn innovation competencies [4]. Students are interested in participating in these projects, because they are able to acquire development skills, promote their employment opportunities and learn innovation competence that is relevant in their workplaces. The integration of education with other academic activities is essential to deepen a specific ability and create transfer of learning, which can be characterized as

learning that lasts after graduation in different situations and environments [10], [11].

The innovations created with the participating organizations improve or create new processes, services, or products for organizations and individuals [12]. Innovations improve the competitiveness of enterprises and boost smart, sustainable, and inclusive growth, which are mutually reinforcing priorities of the European 2020 strategy. The involvement of customer organizations in the projects tends to produce incremental innovations in which existing processes, services, and products are developed following the principle of continuous improvement. The radical or disruptive innovations that require new processes to produce new services and products may face resistance from customers [13], [14].

Innovative activities can be based on creative activities, but, in many cases, new ideas and innovations are acquired from international collaboration and environments. New ideas and innovations based on those ideas are valuable to promote entrepreneurship [3]. Students are able to learn in international projects with other students and participants and create capabilities to work in international activities. They are also able to strengthen their future employment with transnational mobility [15]. It is a similar process that exists in international trade, where business organizations get new ideas and learn to serve their customers better [16].

Innovation pedagogy extends lecture-based individual learning to collaborative learning in projects and networked learning in domestic and international environments. Collaborative learning is a social process that is based on the thoughts and ideas presented by others [17]. Fisher *et al.* [18] and Littleton *et al.* [19] showed that learning groups are able to achieve better learning outcomes than an individual could have achieved alone. Networked learning is not the only extramural activity in social networks; they also include the use of information and communication technology.

The revised role of teachers is to scaffold students and support collaboration to create understanding, new knowledge, and innovations. Innovation pedagogy shifts the role of teachers from lecturing to mentoring and facilitating learning. Teachers not only lecture, they also create projects with other members of the personnel and provide opportunities for students to participate in collaborative and networked learning in real projects tailored for participating organizations and customers. Innovation pedagogy also improves the intramural and extramural collaboration because the projects require interdisciplinary knowledge and skills that meet the needs of external organizations.

The curriculum has been developed to reach out and engage with regional development activities. The curriculum is designed to include teamwork, project studies, entrepreneurship, international exchange, practical training, and a thesis written to enterprises and other organizations. It is essential that relevant and interested students are provided with project studies, so that they can have their practical training and write their thesis in a project. These elements of the curriculum strengthen the transfer of learning so that students are capable of participating in real development work

after graduation.

III. DATA AND METHODOLOGY

The empirical part of this study presents the INDOPEP project. The project is funded by the Erasmus+ Programme, and it belongs to Capacity Building in the field of higher education of Key Action 2, cooperation for innovation and the exchange of good practices. The project is being conducted in 2015-2018.

The Turku University of Applied Sciences is the coordinator of the INDOPEP project, and the other participants include the Inholland University of Applied Sciences, the Business Academy Aarhus, the University of Gdansk, and the University of Seville. The Indonesian participants include BINUS International, Syiah Kuala University, Syarif Hidayathullah State Islamic University Jakarta, the Widya Mandala Catholic University Surabaya, the Yogyakarta State University, and the Southeast Asian Ministers of Education Organization, Regional Open Learning Centre (SEAMOLEC).

The European and Indonesian participants of the project have geographical advantages. The locations of European higher education institutions enable the effective utilization of new pedagogical practices and the dissemination of results in different parts of Europe using their networks. The Indonesian universities reach 34 provinces with their networks, and SEAMOLEC reaches out to the Southeast Asian countries. That supports the exploitation of the results and the sustainability of European learning and teaching methods after the project's lifetime.

The project's participants analyzed the needs in Indonesia [20] and identified several challenges related to learning methods. In most universities, teaching is still traditional, teacher-centered classroom teaching, which refers to textbooks. Intramural education and research do not conduct outreach and engage with enterprises and industry of the real economy. Research is based on literature reviews and has very little practical content and value added. Students do not have contact with students in other disciplines and enterprises where they could experience what is expected of graduates.

The overall aim of the INDOPEP project is to raise the teaching capacity of Indonesian University teachers so they will be able to raise higher education to the European standard. European participants will present interdisciplinary pedagogical approaches to Indonesian lecturers because they are necessary in innovation activities that do not follow the structure of degree programs and subjects in higher education. Interdisciplinary activities prepare students for the labor market and increase the extramural collaboration, but these activities are rare in Indonesian higher education.

Indonesian teachers should be able to compete in the league of World Class Universities, as Indonesian university rectors have written in their target agreements with the Indonesian Ministry of Higher Education. The quality of teaching is considered the key factor in establishing modern and competitive higher education entities among 500 state and private universities, and almost 1,500 universities of applied

sciences. The member countries of the Association of Southeast Asian Nations (ASEAN) are in the position to recruit students and lecturers from all member countries. In order to gain recognition at the national and international levels, Indonesian universities are forced to initiate a rigorous make-over in their teaching methods, and, if they do not, students who can afford to study abroad will leave.

The INDOPEP project also can be seen as an approach to fight the brain-drain of current and future Indonesian intellectuals, and bring the universities closer to industries and companies so that innovative thinking at all levels will become a specific characteristic of Indonesian people. This can be achieved by adapting selected European active learning practices in all levels of education, such as the strategy, planning, implementation, and assessment of education. In the future, potential applicants and their parents, students, personnel, and working-life organizations see Indonesian universities as attractive and profitable options for collaboration.

The European active teaching and learning methods open new opportunities to develop business and sustainable international cooperation between Europe and Indonesia. European enterprises expect Indonesian employees trained in the European manner to meet the common business interests and effective collaboration. The project disseminates the European expertise and innovative thinking as the engine of economic growth in Indonesia, which is rich in natural resources, but has little experience in innovation and industrialization. European enterprises are active in foreign direct investment and look for educated, highly-qualified and reliable Indonesians to work in the Indonesian market. The project initiates continuous public-private collaboration with enterprises.

The purpose of the project is to help Indonesian universities find their way to an Indonesian innovation pedagogy approach, similar to what has been developed in the European universities. It will be reached by three specific targets:

- 1) Introducing tested active teaching and learning practices in Indonesian higher education. This will include testing and adjusting of European practices and embedding them into the structures (strategies and curricula) of Indonesian universities.
- 2) Strong contribution to the dissemination of reliable information on the adaptability of tested pedagogical methods at Indonesian universities in the local university networks by coordinating training workshops for lecturers and summer schools for students (funded nationally).
- 3) Promoting knowledge among European universities on the state-of-art and potential of the Indonesian higher education sector and, more extensively, the Southeast Asian higher education sector.

Several tangible results and outputs have been defined to achieve the objectives of the project. The train-the-trainer program is the key element of the project, which is supported by several actions and documents. The project produces the train-the-trainer manual, which is a combination of European methods, guidelines, and experiences from the pilot programs

in Indonesia. The project also produces self-assessment reports, the agreements on the objectives of each Indonesian participating university, monitoring and evaluation reports, management reports, and quality assurance reports. The dissemination phase produces the website of the project, its newsletter, a seminar, and conference papers. The final conference will be arranged in Jakarta in the spring of 2018. The results of the project will be disseminated to hundreds of universities in 11 ASEAN countries.

Sustainable development is achieved by establishing self-sustaining training centers on innovation pedagogy at the State Islamic University and Yogyakarta State University. Necessary administrative requirements will be elaborated in order to have the institutions ready to coordinate the exploitation of the results from the project. The training centers are essential to train the trainers after the project and achieve long-lasting and effective results in Indonesian higher education.

The project also utilizes e-learning and e-skills because it establishes a website and uses social media to keep contact with the participants and disseminate results to a larger audience. A periodic journal will be issued on the virtual basis and a call for papers will be published worldwide to acquire the best knowledge on active learning methods. Enthusiastic collaboration with the Indonesian ministries will be used to open vistas for the fruitful dissemination of results. SEAMOLEC, the participating organization of the project, the Department of the Asian Ministers of Education Organization, and the Ministry of Religious Affairs are invited to all events of the project.

IV. RESULTS AND DISCUSSION

This section presents the assessment of the Erasmus+ Programme with the project personnel of the Turku University of Applied Sciences. The chapter includes the assessment of the strengths, weaknesses, opportunities, and threats (SWOT) of the INDOPED project and the Erasmus+ Programme. The SWOT analysis, credited to Albert S. Humphrey, came from his research at the Stanford Research Institute from 1960 to 1970. The study assesses the internal strengths and weaknesses and the external opportunities and threats of the implementation of the project.

Table I depicts the SWOT assessment of the INDOPED project and the Erasmus+ Programme. The SWOT table was developed in this study to describe the opportunities that should be exploited or strengthened and threats that should be won and avoided.

Innovation pedagogy is the strength of the project, and it aims to increase the external impact of higher education institutions. It is in line with the aim of the Key Action 2 of the Erasmus+ Programme to promote cooperation for innovation and the exchange of good practices.

The external impact of the project is notable, because the Indonesian universities with their networks reach 34 provinces, and SEAMOLEC reaches out to Southeast Asian countries. Another strength is that Indonesian ministries are involved in the project and support the implementation of the

improved practices in higher education.

The low success rate of 25% in these Capacity Building projects is a strength but also a threat, because it may lower the motivation of competent applicants. The low success rate can be increased with smaller project sizes and allocating more funding for the Capacity Building projects.

The low learning curve [21] of accepted projects also is a threat, because results are achieved at the end of projects in many cases so that they cannot be notably improved during the project. Better plans, kick-off meetings, and the dissemination of results during the project are means by which the learning curve can be improved.

TABLE I
 THE SWOT ASSESSMENT OF THE IMPLEMENTATION OF THE INDOPED PROJECT AND THE ERASMUS+ PROGRAMME

	Strengths	Weaknesses
Opportunities	Exploit <ul style="list-style-type: none"> The innovation pedagogy of the project fits the objectives of the Erasmus+ Programme. The external impact of the project is notable in Southeast Asian countries. 	Strengthen <ul style="list-style-type: none"> The innovativeness can be improved and defined in the Erasmus+ Programme Guide by defining and describing innovations. The external impact of the project can be strengthened by involving enterprises and other customer organizations in projects.
Threats	Win <ul style="list-style-type: none"> The low success rate of the Capacity Building action lowers the motivation of applicants. The learning curve of projects should be improved by better planning and kick-off meetings. 	Avoid <ul style="list-style-type: none"> The unnecessary paper work should be avoided and more funding should be allocated to the core substance of the projects. The projects do not always hire the best and most competent personnel for the projects.

The weaknesses of the projects often are detected in failed applications, but they can be strengthened to submit the project proposal again. The innovativeness of the projects often is not very well defined, but that can be defined in the Erasmus+ Programme Guide in the future, so that innovations are improved, or new processes, services, or products can be provided, as defined by Tidd, Bessant, and Pavitt [12]. They are based on creative ideas that are applied in enterprises or other customer organizations.

The external impact of the project proposals can be defined by involving more enterprises and other customer organizations in the projects. The role of these organizations is important, because ideas do not become innovations if they are not applied in customers' organizations.

The weakness of the projects that should be avoided is the unnecessary paperwork that increases the bureaucracy and reduces the outcome and high quality of the projects. The EU-funded projects typically require administrative personnel who take care of the paperwork and operational personnel who aim to achieve the main targets of the projects. The quality of the projects and the achievement of the core objectives can be

accomplished by decreasing the paperwork by lump sum and flat rate contributions to cover the costs that enable projects to allocate more funding to the core substance of the projects.

The financial control of the accepted projects is limited in the Erasmus+ Programme Guide to the daily amount of funding for an individual in the project. The threat is that the participating organizations might not tend to use the best and high-quality labor force in the projects, because their income levels exceed the daily amount of the grant for each person stipulated in the Erasmus+ Programme Guide.

V. CONCLUSION

The purpose of this study was to present the INDOPED project of Capacity Building in the field of higher education and the implementation of the Erasmus+ Programme of the European Union. The project is based on innovation pedagogy that aims to create learning that lasts after graduation and emphasizes the transfer of learning and the impact of a higher education institution on its environment. Innovation pedagogy is useful for those higher education institutions that want to increase the external impact of their applied research and development projects.

The objectives of the Erasmus+ Programme contribute to the European 2020 strategy and to sustainable development in the Partner Countries of the European Union. The INDOPED project of the Capacity Building in the field of higher education was prepared to meet the European Union's Innovation Union initiative in Indonesia, and it underlines the role of education in boosting economic growth and future professionals' innovation capacity. The INDOPED project supports cooperation with the Partner Countries of the European Union and organizations and systems in their modernization and internationalization processes in higher education.

The INDOPED project supports higher education institutions in Indonesia and Southeast Asia with innovation pedagogy in their modernization and internationalization process. The project also boosts innovation in the Indonesian higher education system, in business, and in the broader socio-economic environment. The cooperation of higher education institutions with enterprises helps participants raise the business orientation and acquire the skills relevant to employability. The impact of the project is extended by the networks of Indonesian universities, which reach 34 provinces and SEAMOLEC that reaches out to Southeast Asian countries. It also is important that the participants from the Ministry of Research, Technology, and Education and participants from the Ministry of Religious Affairs be invited to all events of the project.

The assessment of the INDOPED and the Erasmus+ Programme indicates that the pedagogical approach, such as innovation pedagogy, is important to guide and direct the projects and to achieve the notable external impact of higher education. The threat of a low success rate of project proposals can be avoided by smaller project sizes and increased funding. The outcome of the projects can be improved through better planning, kick-off meetings, and the dissemination of results

during the project's lifetime. The innovativeness of the projects can be improved by defining what is meant by innovation and extending the projects to enterprises and other customer organizations. The burden of unnecessary paperwork and financial rules, such as the equal amount of daily grants for a person, are some of the weaknesses of Erasmus+ projects that should be avoided.

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