

# MODERNIZING VIETNAMESE SUSTAINABLE DEVELOPMENT EDUCATION – CASE STUDY OF SAUNAC PROJECT

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**Abstract** — Vietnam has taken steps to reform its education sector but the shortage of skilled labor is still a major factor in slowing economic growth. Solving this problem would require a thorough reform of the education system and a strong linkage between educational institutions and businesses, in order to have a better match the needs of working life. The benefit of the SAUNAC project for the Vietnamese partner Universities is to bring added value to their educational systems as a whole. The direct added value is twofold: new ideas and practices in the themes related to the smart sustainable cities remarkably enrich the existing contents. The success of the project can be measured in many ways, by using tangible and intangible indicators and deliverables. However, the change in mindset is a key towards any sustainable change in practices.

Việt Nam đã thực hiện các bước cải cách ngành giáo dục nhưng thiếu lao động có tay nghề vẫn là nhân tố chính làm chậm tăng trưởng kinh tế. Để giải quyết vấn đề này đòi hỏi phải cải cách toàn diện hệ thống giáo dục và phải có mối liên kết chặt chẽ giữa các tổ chức giáo dục và doanh nghiệp, để có thể phù hợp hơn với nhu cầu của môi trường làm việc sau này. Lợi ích của dự án SAUNAC đối với các trường đại học, các đối tác Việt Nam là mang lại giá trị gia tăng cho toàn bộ hệ thống giáo dục của họ. Giá trị gia tăng gấp đôi: các ý tưởng và thực hành mới trong các chủ đề liên quan đến thành phố thông minh bền vững làm phong phú đáng kể các nội dung hiện có. Sự thành công của dự án có thể được đo bằng nhiều cách, bằng cách sử dụng các chỉ số hữu hình, vô hình và phân phối được. Tuy nhiên, thay đổi trong suy nghĩ là chìa khóa cho bất kỳ thay đổi bền vững nào trong thực tiễn.

**Keywords** — *Active learning, Innovation competences, smart sustainable cities, University-Business cooperation, FINCODA barometer*

## **I. INTRODUCTION AND FRAMEWORK**

*Problem solving, critical thinking* and *creativity* were ranked as top three skills in the 2016 survey, conducted by the World Economic Forum [1]. Alike findings and results have been provided by several other global and national surveys, even when the target year is one or two more decades in the future. Industrialization 4.0 was launched publicly around two years ago and it has been followed by the Education 4.0 where the skills needs are very much in line with the World Economic Forum report's observations.

Above mentioned top three skills are all linked on creating new innovations to serve the purposes of citizens, organizations or the whole society. In 2016, Turku University of Applied Sciences (TUAS) from Finland started a Sustainability Alliance of Urban Networks in Asian Cities SAUNAC project [2], where European and Vietnamese higher education institutions (HEIs) build together a module in sustainable development. In addition to highly topical content, in the core of the SAUNAC project is the utilization and development of active teaching and learning methods in Vietnamese Universities and their networks.

### **I.1 SAUNAC IN BRIEF**

SAUNAC is a European Commission funded project where the multidisciplinary sustainable development study module Smart Sustainable Vietnamese Cities (SSVC) utilizes student-centered teaching and learning methods, such as ICT-based learning platform and blended learning methodology. Content wise, the study module addresses especially environmental and social problems caused by urbanization. Turku University of Applied Sciences TUAS (Finland) is the lead partner of the SAUNAC project and there are six Vietnamese higher education institutions as core partners: Hanoi University of Civil Engineering – HUCE, Danang University of Sciences and Technology - DUT, Haiphong University – HU, Hue University of Sciences – HUS, Ho Chi Minh City University of Natural Resources and Environment – HCMUNRE, and Vietnam National University Hanoi VNU-HUS. In addition to TUAS, the European partnership include the Utrecht University of Applied Sciences (The Netherlands), Valencia University of Applied Sciences (Spain), Manchester Metropolitan University (United Kingdom) and Hamburg University of Applied Sciences (Germany). With their European partners, the participating Vietnamese HEIs will learn to co-operate on emerging societal challenges with innovative approaches. Regions, municipalities and private companies are important stakeholders and they form a learning community with participating Universities.

### **I.2 STRATEGIC FRAMEWORK OF THE SAUNAC PROJECT**

Vietnam has taken steps to reform its education sector but the shortage of skilled labor is still a major factor in slowing economic growth. Solving this problem would require a thorough reform of the education system and a strong linkage between educational institutions and businesses, in order to have a better match the needs of working life. The productivity of the Vietnamese labor force is comparatively low compared to regional level, and there is a greater need for staff retraining than elsewhere in Southeast Asia. [3]

The SAUNAC project is also relevant in accordance with long-term country strategies of Vietnam. For example, according to “Finland’s transition strategy with Vietnam, Cooperation between Finland and Vietnam 2016-2020” [10], Finland aims to become number one partner of Vietnam in education. An updated Memorandum of Understanding being negotiated between the Ministries of Education outlines five principal areas of cooperation in the education sector: curriculum design and implementation, teacher training, vocational education, the higher education and educational system, and management. The main content of the Memorandum strongly reflects demand from the Vietnamese side [2].

From European point of view, the SAUNAC project continues and consolidates the successful co-operation begun within the CARPE Strategic Partnership [4] and supports the goals of Vietnamese and EU development policies as outlined by the EU Commission and the Vietnam National Green Growth Strategy (VNGGS) for the period 2011 – 2020. The SAUNAC project provides concrete answers to

the need of a greater focus on investing in drivers for inclusive and sustainable economic growth, providing the backbone of efforts to reduce poverty.

Additionally, the project methodology is in accordance with the EU development policy priority to modernize higher education in less developed parts of the world. [5] [6]

### **I.3 CHALLENGES IN MODERNIZING VIETNAMESE SUSTAINABLE DEVELOPMENT EDUCATION**

Under heading IV.1 of this article, we will discuss about the needs in Vietnamese partner Universities directly related to the implementation of the SSVC module. Additionally, there are several systemic and strategic challenges in applying the Innovation Pedagogy learning approach in Vietnam:

- Effective University-Business cooperation requires mutual trust and that must be created step-by-step by selecting themes in which it is rather easy to achieve win-win results. This often requires sufficient input also from staff members of the University, not only from students
- Productive group work requires sufficient tools (e.g. internet connection and computers) and facilities (project rooms in campus area).
- Flexible curriculum gives opportunity and structure for different student-company cooperation.

## **II. CORE OBJECTIVES OF THE SAUNAC PROJECT**

The aim of the project is to modernize the teaching and learning methods of Vietnamese higher education institutions and to promote the networking and cooperation of higher education institutions. Moreover, developing the teaching contents and methods aims at improving the abilities of graduating higher education students to compete in the changing labor market. This aim is also promoted by collaboration with enterprises as part of studies.

The urban planning system of Vietnam is fragmented and need the collaboration, involving plan preparation and implementation with different stakeholders. Knowledge acquisition is an important part, and for that education, training, research and information resources play a key role.

The SAUNAC project will lead to active cooperation between European universities (where innovation is recognized as a key of success) and Vietnamese universities, where innovation is considered as something coming from industrialized countries. We strongly believe that active multidimensional Public-Private-Partnership cooperation between Universities, public sector organizations and private enterprises - where students have possibilities to enhance their competencies in real working life situations - is a key for more efficient as well as cost-effective higher education. The nascent cooperation between universities, enterprises and public bodies provides valuable opportunities for students to learn by designing solutions for environmental challenges in the cities already as part of their HE studies. In the longer scale it could be foreseen that participants will form sustainable alliances - not only between universities but also - between universities and enterprises. One major innovative element of the SAUNAC project is cooperation and forthcoming alliances in the local and regional level as well as also in the national and international level.

The benefit of the SAUNAC project for the Vietnamese partner Universities is to bring added value to their educational systems as a whole. The direct added value is twofold: new ideas and practices in the themes related to the smart sustainable cities remarkably enrich the existing contents. As for the contrary, for the existing status quo in the Vietnamese Universities, pedagogical methods and practices introduced in the SAUNAC project enable Vietnamese Universities in the near future offer blended learning studies which are implemented by following the main principles of the Innovation Pedagogy learning approach [8].

### III. INNOVATION COMPETENCES AS LEARNING OUTCOMES

In Europe, the European Commission has set new priorities for the Higher Education in the recently launched EU Agenda for Higher Education [8]. For the first time, the capacity of the students for producing new innovations has been set as one of the core learning outcomes. This approach is remarkably visible also in the SAUNAC project. Based on several years' systematic European-wide research and development actions by European partners of the SAUNAC project, five core dimensions of innovation competences have been defined.

1. Initiative (ability to make decisions or carry out actions to operationalize your ideas as well as mobilize and manage those who have to implement the ideas),
2. Creativity (ability to think beyond tradition to generate or adapt meaningful alternatives),
3. Critical Thinking (ability to deconstruct and analyze ideas),
4. Team work (ability to work efficiently with others in a group),
5. Networking (ability to involve internal/external stakeholders).

This FINCODA (Framework for Innovation Competences Development and Assessment) model has been psychometrically validated in the University-business cooperation environment and the mixed-method validation study - conducted by the experts from the Utrecht University of Applied Sciences - showed that relevant innovation process competencies can be measured in an adequate manner. [7]

Self- and peer assessment of learning outcomes are relatively new approaches in wider scale in European universities, and even more in the South-East Asian Higher Education. They are essential elements in the FINCODA model which is also used in the SAUNAC project. [2]

### IV SPECIFIED NEEDS OF VIETNAMESE PARTNER UNIVERSITIES

To evaluate the needs and state of the practice of the Vietnamese partner Universities, a need-analysis survey was conducted by the project on Spring 2017. This was also essential to target well all activities of the SAUNAC project.

The outcomes of the survey show that in terms of the content for the Smart Sustainable Vietnamese Cities courses, the six most important topics for all Vietnamese universities are as follows:

1. Environmental Challenges by the Municipal Land Use
2. Renewable Energy
3. Waste, Water and Waste Water Management (Recycling)
4. Food Access & Food security
5. (Building-) Energy Efficiency
6. (Decentralized) Energy Supply

Due to the geographical situation, climate conditions etc., there are different needs and problems in each city, region and university.

Method-wise, according to the results of the survey, all Vietnamese partners are using conventional teaching methods. Practices and small-scale projects are also implemented at the majority of the universities. Even though two Vietnamese partner universities have been testing blended learning before the SAUNAC project, it is not a permanently used or well-known methodology. Blended Learning, Practice, E-Learning and Projects are methods that all Vietnamese partners are aiming to use in the future.

Before starting to develop our SSVC courses, we organized a Train the Trainer program, which aimed to get a better understanding of the concept of Smart Sustainable Cities, practice with various

tools & techniques for investigating Smart Sustainable Cities and exchanging best practices of innovative teaching and learning practices.

As a result of that training, we learned that Vietnamese lecturers and trainers still need more training and guidance e.g. in:

- How to build a course in eLearning environment and training on how to teach eLearning courses
- Further assistance in techniques for assessment, review, feedback and reflection.
- Periodical assistance / supervision in pedagogy / course design in hybrid learning environment; schedule regular moments for review on the course design.
- Finally, regular assistance in developing the course content (smart sustainable cities)

Since there was only a little or not at all knowledge or experience in the field of blended learning but a strong will to use this kind of methodology, this should be in the focus of the future development activities as well. The positive experiences from the Train the Trainers Workshop, organized by the SAUNAC project in Hanoi on May 2017 and targeted to the teaching staff of Vietnamese partner Universities, is the foundation and should be further elaborated.

#### **IV.1 STAKEHOLDER COOPERATION OPENS DOORS FOR INNOVATIONS**

Universities should be the active operators in regional innovation processes. Therefore, one of the main tasks in our SAUNAC project, is creating regional networks in sustainability, consisting of cities, private companies, regional public authorities, NGOs and other relevant stakeholders. Involvement of these external stakeholders in the delivery of higher education is essential to ensure the SAUNAC outcomes. Stakeholder organizations are important for the Universities in the implementation of SSSC module in several roles:

- Influencing into course contents
- As origins and sponsors of students' projects
- As evaluators and assessors of learning outcomes of the students
- As employers [2]

Cooperation between Universities and external stakeholders is a real win-win situation. In addition to positive effect to higher education, external stakeholders gain added value thanks to input from Universities' students, lecturers and researchers. There can be a significant boost to regional development if the potential of Universities will be utilized, best practices from Europe are at Vietnamese partners' disposal. Concrete added value for the external stakeholders includes e.g.

- Easier and cheaper recruitment processes, thanks to possibility to see students in real working life activities during their studies
- New ideas and up-to-date information, thanks to knowledge-transfer process from Universities and joint development activities
- New innovations in processes, products and services, through practice-oriented research of students and staff of Universities

#### **IV.2 SMART SUSTAINABLE VIETNAMESE CITIES (SSVC) MODULE IF BRIEF**

In the international course development workshops, we decided that full SSVC Module is worth 15 credit points (ECTS) consisting of 5 courses:

1. SSVC Introduction and Methodology
2. Design for Social Sustainability
3. Sustainable Entrepreneurship

4. Engineering Sustainable Cities
5. The Urban Sustainability Challenge

A key for ensuring the successful adaptation and adoption of the SSVC module in Vietnam was to ensure that all provision being developed by the partners is suitable for the Vietnamese university system. Therefore, a rigorous analysis and discussion took place in relation to each course around 4 key areas: Objectives, Methods & Methodology, Course Materials and Timing.

The implementation of the SSVC module includes joint sessions between Vietnamese Universities as well as stand-alone parts to be implemented individually in all Universities.

### **IV.3 SPECIFIC LESSONS LEARNED FROM THE IMPLEMENTATION OF THE PROJECT**

We would like to highlight three special issues that we as project coordinators have identified during the SAUNAC project: 1) Merging the expertise and viewpoints from Vietnam and several European countries in building up new study module creates a great learning platform for students. Today's students are tomorrow's professionals in the global world and intercontinental cooperation provides them a chance to shape their mindset to be global already during their higher education studies; 2) "One size fits all" doesn't apply to education. Methods, practices, tools and approaches coming from Europe are worth of getting acquainted but copy-paste mentality does not work neither solve Vietnamese challenges; 3) In addition to formal agenda and project plan, a global development project like SAUNAC provides a platform for informal and non-formal learning. Undoubtedly, all persons (University staff members and students and other stakeholders) that have participated in intercontinental SAUNAC meetings or workshops, have learned a lot about different cultures and daily practices in other countries as well as had chance to practice their language skills in a safe environment. These unofficial learning outcomes are worth of gold in many ways and should not be underestimated when summarizing total impacts and achievements of the project.

### **V.CONCLUSION**

Sustainable success can only be achieved when national and institutional strategies (defining of learning outcomes), national and institutional curricula and implementation plan and practices (teaching and learning activities) and finally national and organizational assessment practices (assessing of learning outcomes) are fully in line.

In Vietnam, the transform from hierarchic teacher-centered learning culture towards student-centered learning takes time. In this modernization process, we need forerunners. We as European partners and promoters of the SAUNAC project are grateful if our findings and examples inspire and encourage Vietnamese partners to create better practices towards more effective offering of modules and degrees.

It has been a privilege to work closely with six Vietnamese Universities and see the will for modernization of pedagogical practices among Universities' staff and students. We have still a long way ahead to go. All projects have a unique agenda and activities, same applies with the SAUNAC project. The success of the project can be measured in many ways, by using tangible and intangible indicators and deliverables. However, the change in mindset is a key towards any sustainable change in practices. Therefore, we are delighted to quote one of our Vietnamese partner universities' Director: "Besides conducting project designed activities, the project spirit is already influencing the current teaching practices at our University. The active mode of teaching, with interactions amongst teachers and students, and the curricula development methods learnt from SAUNAC are now being applied in the University".

## VI. ACKNOWLEDGEMENT

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