

The Alliances: Collaborating Programmed between Education and Industry

Pusanisa Thechatakerng and Melquicede Lozano

Abstract—University allied with industry was accepted as one of the core functions across university system, together with teaching and research. As these alliances could be enhanced students' knowledge from their workplace with the comprehension from university. Nevertheless, the studies in this area, the collaboration between university and industry were still limited, especially in developing countries. This research, then drew on the experiences of a project investigating issues relating to workforce development and the learning experience within the workplace and also tried to probe the phenomena of the engaged programme between university and industry, and the performance of allied programme. The results showed the significant signed through qualitative research which collected data via interviewing the concerned staffs at CEDEP. Moreover, the result also demonstrated the mutual benefit to university and industry after participated students have passed the 5 practice periods of CEDEP or 4 steps programme.

Index Terms—alliances, collaboration, education, industry

I. INTRODUCTION

The importance of university and industry collaboration has become increasingly apparent over the last decade because the university needs to integrate and to transform knowledge through educators, curriculum and learning environments to students preparing them for the changing world (Langworthy, 2007). As university (higher education) and industry have played an important role in increasing competition to recruit students, the responding this could be industry collaborating by university.

University allied with industry is accepted as one of the core functions across university system, together with teaching and research. As these alliances could be enhanced students' knowledge from their workplace with the comprehension from university. Alliances defined broadly as an agreement between two or more partners to share knowledge or resources, which could be beneficial to all parties involved (Boyte, 2009; Thechatakerng, 2005) which in this study meant the collaboration between higher education institutions and workplace.

ICESI University (Universidad ICESI) is leading

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P. T. is with the Faculty of Business Administration, Maejo University, Chiangmai 50290 Thailand. (e-mail: thepusanisa@yahoo.com).

M. L. is with Universidad ICESI, Cali, Colombia. He is now with the Department of Physics, Colorado State University, Fort Collins, CO 80523 USA (e-mail: author@lamar.colostate.edu).

educational institutions, producing some of Colombia's most employable graduates, and reputation and quality of the School of Business Administration's accredited. ICESI has an international reputation for excellence in work-relevant education and high quality research, and engagement with the needs of industry and industry. Moreover, ICESI has built a worldwide reputation for excellence in professional and research. With the success of ICESI which is its education engaged with industry. Nevertheless, the studies in this area, the collaboration between university and industry are still limited, especially in ICESI. This research, then draws on the experiences of a project investigating issues relating to workforce development and the learning experience within the workplace. Furthermore, this qualitative research tries to probe the phenomena of the engaged programme between university and industry, and the performance of allied programme..

II. LITERATURE REVIEWS

The importance of university, industry, and community engagement has increasingly over the last decade. Then, the managerial framework for university, industry, and community is necessary. This section will be explained the alliances between university and industry.

A. University and Industry collaboration

As university (higher education) and industry have played an important role in increasing competition to recruit students. The responding this could be industry engagement by university. Which the government policy proposes university to produce students to have higher level skills to serve its industry, or should be more responsive to industry's needs, also in global market. The allied project between university and industry should be overlapping in four areas. These were work-based learning (WBL), levers and enablers, management of change, and building partnership (Boyte, 2009; Dales & Arlett, 2008; Ryan, 2006; Barbara; 2005; Didibhuku; 2004). More consequence will be explained in the next section.

B. Practice Programme of ICESI

In the part of ICESI university also has its own centre to prepare students before practicing their own career in the workplace called *Professional development* to support students in developing their own profession. The centre of professional development (CEDEP) is a center to form, to promote, to find a place, to convoy, to consult, to research, and to facilitate transition to students from university to the world of working. This centre is the unit of management in serving students to generate their knowledge approach to the

industry needs. These would help to contribute productivity development of the region and country. In addition, to offer the talent of human's competence. Thus this centre offers variety programs to develop the students who participate in the programs, called the program of professional development (PDP). This program is a strategic form, allow the students in last semester to obtain their knowledge with professional by transit from the university world to the professional world, needed by industries. Five periods are arranged to support participated students, that are period of: formation, promotion, workplace finding, continuing during practice semester, information evaluation and feedback and program of work place for newly graduate student and online job application (CEDEP, 2010).

We integrated the education and industry in the form of collaborated programme, that have just previously mentioned above, which these programme supported each others. The allied programme between university and workforce should be overlapping in four areas; work-based learning (WBL), levers and enablers, management of change, and building partnership (Dales & Arlett, 2008), and also should be related with the programme of CEDEP.

III. RESEARCH METHODOLOGY

We utilized a qualitative approach to this study, the paper was processed as follows:

A. Methods

1) Sample

As an in-depth, we divided into two groups the first group focused on the CEOs of CEDEP, for example the director of professional development, who was in-charge in this area and some of the assistants, the coordinator of promotion, who were concerning in this field , and another group were students who have engaged in this programme, from the school of administrative sciences and economics. On behalf of classifying participated firms and selecting participated students as case to interview, we reviewed from the recorded data and the statistic since 2007-2009, which there were 372 students and firms participated in the practice programme. An in depth interview was conducted involving a purposive participants at ICESI.

2) Validity

Several validity issues were inherent within this paper. The first issue was in the small sample size being used. We involved only the staffs in CEDEP and engaged students. In addition, the study relied on the co-investigator's personal contacts as an initial source for university experts as well as participants in industry. This may limited the generalizability of the findings.

3) Method of Data Analysis and Interpretation

Documentary analysis, information synthesizes, and interviewed targets have observed in the study. Once we obtained all the data from the mentioned resources above, then one of our research team, analyzed the data by classifying them through social statistic programme. After that, all information was interpreted.

IV. RESULTS

The results found in this part were to explain the characteristic of participants and firms, and the collaboration between university and industry (workforce).

A. Characteristic of Allied Firms with University

1) Types and Size of Allied Firms

Types and size were classified as characteristics of the firms. In this study, firms that engaged with the university were large size firms (60.5%) which were in service and construction industries, follow up with "no identified" (21.0%), and medium size of the firms (12.9%) respectively.

2) Types of Allied Firms and Area of Study

The three areas of study consisted of Business administration, Economics and international business, Public accounting and international finance participated in service firms (55.9%), follows up with construction (21.4%), and other (8.1%), respectively.

B. University and Industry (workforce) Collaboration

The university and workforce collaboration have used the allied programme of the 5 practice periods of CEDEP (ICESI), which we found that these practice periods have fitted perfectly with four steps programme of Dales & Arlett (2008). We could integrate the two practice programme together as follows; a) work-based learning - WBL (the period of formation and, promotion and working place), b) Levers & enabler (continuing to practice), c) management of change (information evaluation and feedback), d) building partnership (programme of work place for newly graduated student and online job application).

1) Work-based learning – WBL (the period of formation and, promotion and working place)

The steps in work-based learning were divided into 2 periods; the period of formation , promotion and working place. Natalia Gonzalez explained that at the first period participants would perceive the practice at workplace that they desired. In this step, Angela Ximena Gomez Hurtado, a coordinator of formation, would have to observe and to meet students to evaluate basic situation. Then, the workshop plan would be established and sent to faculties by coordinator before the last semester of studying would start. All 280 students per semester, must participate in this workshop which would take 1 day/room/30 students. The students would be trained about the all necessary documents need by firms, and let students having experience to face with the real world. Here was the initial point to transit university world to working world via the learning that the students needed to willing developing and to robust the capacity from their knowledge follow the requirement from labor market. From this period the students would be able in having dynamic personal knowledge, and be able to create motivation to those jobs that allowed professional based on personality, interesting, expectation and capacity for giving initiate project of professional life. Furthermore, the methodology used by firms in the process of selecting labor would be clarified in this stage. In addition, the labor market trend would be indentified to prepare students in the professional area.

Natalia continued taking job from Angela, also started hunting job for students from companies only in Colombia. Normally, the workforce would offer places for students but would focus in the area need by firms. This second period would defend for the relation between university and the firms, and also would be identified the vacancies encompass in the industry. Moreover, the interested area and professional of students would be explained to perceive whether the new professional knowledge would be obtained and be verified the career path that the students want to continue.

This step, the program would identify the labor opportunity in the industry which could be responding to the expectation of developed students. CEDEP would arrange the event to promote students getting the right job, such as "labor fair job" by inviting companies to participate in the fair. Besides, the university would maintain the relation with the industry, and then presented the place that accepted the candidate students follow their interesting and expectation. For the activity in this period would be the introduction of the practice chief, labor market, company visiting, institute presentation, and academic event of each program.

2) Levers & enabler (continuing to practice)

Sandra Monica Gallego gave detail that the CEDEP of ICESI prepared the continuing to practice for students. After the work-based learning steps has already done. The participants would have enough capacity to work with the company that they want. Then, the students would continue to practice with the company and its coach (professional in the company). The practice in this period divided into 3 steps; 1) working in the organization, the students would be give task, introduce to supervisor, visit the firms, and evaluate their practice. 2) individual working; the students need to identify and to robust their competences. 3) working group; to participate in Businesses club and workshop.

3) Management of change (information evaluation and feedback)

In this steps, the participants would start to contact with their interested firms and would received the feedback from professional consultant about the students' strengthen and weakness. Moreover, the relation selecting process paradigm and the labor demands would be explained from firms' trainers. In addition, personal dynamic, motivation, competency, and personal talent would be integrated and adjusted in each person to firms. After this period, the participants could constructed the action plan that affected the process of selection from the potential firms, and started to practice their work where have been selected by firms (Sandra Mónica Gallego Díaz).

4) Building partnership (programme of work place for newly graduated student and online job application)

The building partnership step which was managed by Sandra Milena Orejuela Villegas clarified that the period tried to facilitate the newly graduated student that hadn't job, and want to work through presentation about different potential firms, and the process to achieve the firms with different activities to let the students known about the programme that offered job for newly graduated. By mean of this methodology, 95 percent of newly graduated could obtain the job and receive the standard or above the standard

salary. Furthermore, online job application also offered a good chance to newly graduated students, made clear by Maria Isabel Martinez.

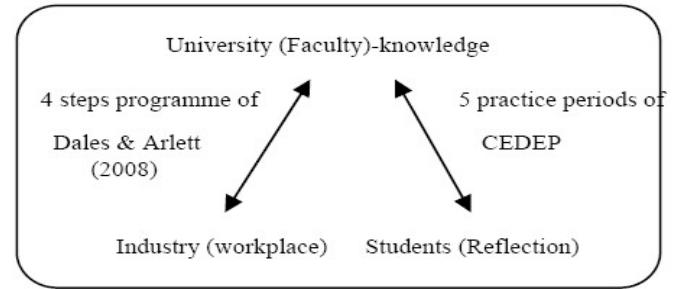


Fig. 1 The relation between Education and industry

V. THREE CASES FROM PROGRAMME PARTICIPANTS

The observation have done through students' in-depth interviews which were classified into 3 cases; success, normal and failure cases. The definition of the cases; success meant the student who was practiced in the workplace and continue to work at the same firm. Normal case was the student who was practiced in the workplace until the end of the practice period, after that has changed to work in another firm. Failure case meant the student who was practiced in the workplace and quitted that place during the practice time, then went back to maintain its own family business. These definitions were discussed among the researchers team, which included the director of professional development who directly concerned with the cases, based on the actual practice of the student since 2007-2009. The target participants were interviewed basing on their 5 practice periods or 4 steps relation between university and workforce.

A. Success case

Giovanni Montoya Grisales was 22 years, a student in Business administration; Marketing and Publicity. He participated with the practice programme. During his training time in the workforce, Ladrillera Melendez S.A., a construction firm, in the trade department, He was a work hard person, his characteristic was impressed by his boss and could get along well with his colleagues in the company. Giovanni told us that although the management and colleagues good to him, he, however, was still stressed from his workforce because of the problem in production, and also being patient of trying to make a good relationship needing to be patient. *The learning from workforce (WBL)*, he could learn many thing from the company for example preparing company budget for sellers, his working place coach trained him how to prepare budget, how to increase the sale force. This practice assisted Giovanni to understand the real world. *Management of Change (MOC)*, he has changed; the style of dresses from informal to be formal, the process of thinking, having more responsibility, and becoming company stereotype, since he participated in the period of practice. *Building partnership (BP)*, as a benefit he could get from workforce, he had a good relationship with colleagues, had many new friends, and could understand how to work as a team. At the end of practicing period with Ladrillera Melendez S.A. company, Giovanni was offered to work with

the company, he continued his work with this company because of the desiring to have more experience in this firm. He, however, still needed more experience in different area from diversify companies to create his own business as entrepreneur in the future. When we observed his family back ground, we found that his family has its own small business, traditional meat shop and want him to continue and to develop to be modern business.

TABLE I: Summarization of Participants in Allied programme

Case	Firm	WBL	MOC	BP
Success	Ladrillera Melendez S.A	-preparing company budget	- style of dresses - the process of thinking - having more responsibility - becoming company stereotype	-having good relationship with colleagues & friends
	Marketing	- increasing the sale force		
Normal	Colgate Palmolive	-the style of working from her boss		-establishing network in and outside company and partners of the company
	Internal Audit	-computer skill	-dressing, character changed	
Failure	Kimberly Clark	-managing time -working under pressure -working with team -responding in many duties	- changing his characteristic to be more active -the thinking system to be more process - having more responsibility	-good network with his group

B. Normal case

Margarita Maria Mejia Giraldo, was born in a family run business, a student of financing was trained in Colgate Palmolive Company as trainee internal audit department for 6 months. Her performance was very good and the report from her trainer showed the satisfaction of her working. She had a very good relationship with her colleague and boss. The human resource of the firm offered her a good position in the company and above standard salary. The learning from workforce (WBL), she could learn the style of working from her boss, for example, how to work, how to react, and etc. Management of Change, Margarita improved her computer skill and dressing. Besides, her character has also changed in positive way. Building partnership, she could establish her network with friends in and out side company and with

partners of the company. Margarita got offer from the company to continue her job at this company, but she ignored this chance, because she want to have more experience in another company, in abroad to be entrepreneur in the future in the area of real estate broker (buying-selling house).

C. Failure case

The last case was the student who was practiced in the workplace and quitted that place during the practice time, then went back to maintain its own family business or to work in a new company. Luis Alejandro Arroyo was fell in this case. He was a 22 years student who worked with Kimberly Clark. He worked hard during the week and weekend in this company. His boss was very strict whenever he called Luis to work he had to include on the weekend. The performance need to be 100% perfectly, then the problem occurred with Luis, the newly graduated. Luis didn't have a good relationship with his boss but colleagues. He tried to avoid facing with his boss, but he, finally, was fired from the company. With *the work force learning*, he could manage time, working under pressure, working with team, and responding in many duties. Management of Change, he had change his character to be more active, the thinking system to be more process, and having more responsibility in his duty. *Building partnership*, he had good network with his group in the company but the leader (his boss). He finally was fired. Nevertheless, CEDEP helped him having a new job till the end of practice (see table 1).

VI. CONCLUSION, IMPLICATION AND FUTURE RESEARCH

We revised the information about ICESI in this field obtained from universities resources, for example the department of professional development (Centro de Desarrollo Profesional: CEDEP), which we utilized report evaluation of practiced students since 2007 – 2009 to analysis and to synthesize. Moreover, an in-depth interviewed was used with the purposive target. Frequency demonstrated participated firms characteristics were large and medium size and were in construction and service sectors. In addition, the students in Business area involved in the mentioned two sectors as well. These results implied that the large and medium size firms have played an important role in supporting the engagement between university and industry to their needs in driving country economy. Qualitative showed the relation between university and industry through the CEDEP five periods practice or four steps of Dales & Arlett (2008); a) work-based learning - WBL (the period of formation and, promotion and working place), b) Levers & enabler (continuing to practice), c) management of change (information evaluation and feedback), d) building partnership (programme of work place for newly graduated student and online job application). These alliances programmes illustrated the excellent performance of participants with receiving the above standard salary, having 95% of participants who obtained job, and satisfying toward job obtaining. Moreover, the firms in industry could obtain the resources from the university as their needs, as Thechatakerng (2005) argued that alliances could be

beneficial to all parties involved. The three cases also illustrated the mutual benefit between industry and education by industry could obtain the right workforce to drive their business as they needs and the university could train the student to serve the needs of industry, ic by this results could interpreted that the university could obtained the benefits in term of reputation, from this impact, in addition the university could recruit more students to its university (Dales & Arlett (2008). Moreover, the participants themselves could find the right jobs also learn more experience to establish their own business in the future.

The future research should be focused in an in-depth interview of the workforce side to gain more data to analyze. Furthermore, it is important to examine the relation between education, industry and community whether they relate and support to each other. In addition, the comparative research should be focused among universities in developing countries but different culture for example Maejo university in Thailand and ICESI university in Colombia to have suitable model.

Limitations of the study should be stated. This research focused on only faculty of business curriculum in the area of business administration, economics and international business, and public accounting and international finance which were engaged with industry at ICESI University, Cali, Colombia, since March – June, 2010. The data collected from participants, staff of CEDEP, and management in ICESI but workforces' staff. So, the results should be treated with caution.

The research can enhance knowledge in this field. The information from this study can be used to develop model in establishing new area of study in Thai universities and other universities that have the similar environments. Besides, the information from this study could be advantaged to university, faculty, colleagues, students and also industry to plan their suitable programme for mutual benefits. Moreover, institute, government agency can be use this information to plan for the allied programme to support each institutes to drive economics of the country. In addition, scholars who are focusing in this area can use information found to their study.

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REFERENCES

- [1] A. H. Barbara, (2005). "Scholarship and Mission in the 21st Century University: The Role of Engagement". [Online]. Available: http://depts.washington.edu/cchp/pdf_files/AUQA_paper_final_05.pdf
- [2] A. Langworthy. (2007). "University-Community engagement", [Online]. Available: www.lilydale.swinburne.edu.au/crd/documents/UniversityCommunityEngagement.pdf
- [3] H.C. Boyte, (2009) of L. Benson, I. Harkavy and J.Puckett, "On the Future of Engagement". [Online]. Available: <http://tomprofblog.mit.edu/2009/03/17/931-on-the-future-of-engagement/>
- [4] M. Nussbaum. and A. Miehlbradt. (2003). "Assessing BDS Demand and Supply in Weak or Limited Markets ".[Online]. Available: www.seepnetwork.org
- [5] M. Ryan, (2006). "Engagement Taxonomy". <http://oice.vu.edu.au/sitebuilder/resources/knowledge/asset/files/17/ktandceforumreport180606.doc>
- [6] M. Vickers, H. Catherine and M. Florence. (2004). "University-Community engagement: exploring service learning options within the practicum", *Asia-Pacific Journal of Teacher Education*, 32(2). [Online]. Available: <http://www.tufts.edu/talloiresnetwork/downloads/Vickers-S-LJournalofTeacherEd.pdf>
- [7] Queensland Government. (2011) "Education and Skills for the Smart State". [Online]. Available: <http://www.smartstate.qld.gov.au/partnerships/educationskills1.shtml>
- [8] R. Dales & C. Arlett (2008). "Higher education and the Workplace – supporting employer engagement in engineering and physical science". [Online]. Available: <http://www.heacademy.ac.uk/assets/York/documents/events/conference/2008/RichardDales.doc>
- [9] S. Thechatakerng, "Alliances Implementing by Thai Firms", Presented Paper in EURAM 2005, Munich, Germany. (2005)
- [10] The Carnegie Foundation for the Advancement of Teaching (2005), "Carnegie Classification Project". [Online]. Available: <http://www.uky.edu/Faculty/Senate/files/Engagement%20Definition%20and%20Examples%2020090216.pdf>
- [11] University of South Africa (2008). "Community Engagement and Outreach Policy". [Online]. Available: http://cm.unisa.ac.za/contents/departments/community/docs/CommEngagemPolicy_toManCom_26an08.pdf
- [12] W.T. Didibhuku . (2004). "The Role of Higher Education Institutions in Promoting Non-Formal Education in South Africa: Challenges and Prospects", [Online]. Available: http://portal.unesco.org/education/en/files/52551/11725001715Didibhuku_Thwala.pdf/Didibhuku%2BThwala.pdf



Pusanisa Thechatakerng was born in Chiangmai, Thailand on 11 April 1962. The author obtained Ph.D. from Universitat Autonoma de Barcelona, Barcelona, Spain, 2003 in the field of Entrepreneurship and small business management.

She currently works as a Director of MBA programme and teaches in the faculty of business administration at Maejo university, Chiangmai, Thailand. She also supervises students' thesis dissertation in both Master and Doctorate degree in various universities but mainly Maejo university. She was invited as a visiting professor in teaching and researching in many countries; Universidad de Guadalajara, Mexico; Universidad ICESI, Colombia; Universitat Autonoma de Barcelona, Spain by government grants and host institutes. Besides, she is appointed as a peer reviews of various journal in domestic and international. Her published research papers were on Strategic alliances, Entrepreneurship, family business, international marketing & business, marketing management, as well as her interested research areas.

Dr.Thechatakerng. is a member of IACSIT, at the same time is a member of many social groups in Thailand.



Melquicedec Lozano was born in Cali, Colombia. The Author obtained his Ph.D from Universitat Autonoma de Barcelona, Barcelona, Spain, in the field of Entrepreneurship and small business management. He is now work as a Director of Research and Professor of Family Business Management. Universidad Icesi, Cali, Colombia. He also gives class in Entrepreneurship and family business. His published research were on Entrepreneurship, small business, and family business.

Dr.Lozano is a member of Entrepreneurship and family business group in Colombia.