Challenges towards Employability: Higher Education's Engagement to Industrial Needs in Japan

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Abstract

This paper examines the challenges and strategies of twenty-three Japanese universities working towards the improvement of employability skills. These universities have been selected for the national project "Improving Higher Education for Meeting Industrial Needs" funded by Japan's Ministry of Education, Culture, Sports, Science and Technology. The purpose of this project is to improve the higher education systems that help develop employability skills that industry seeks by sharing their challenges and strategies in collaboration with companies. This paper analyses these challenges and strategies from the reports submitted by these universities for the preparation of the Second Conference of Industry-University Partnerships that took place in Nagoya, Japan on November 14, 2013. This paper concludes with discussion drawn from the reports and the conference.

1. Introduction

In September 2012, twenty-three universities in the Chubu area, the central region of Japan, were selected for a three-year national project entitled "Improving Higher Education for Meeting Industrial Needs" funded by Japan's Ministry of Education, Culture, Science, Sports and Technology. The purpose of this project is to improve the higher education system's ability to develop industry-needed employability skills in university students by sharing information and knowledge about challenges and strategies with the other universities and with companies.

In order to do so, the Japanese government supports groups of universities in nine regions of Japan: Hokkaido, Tohoku, Kanto/Koshinetsu, Chubu, Kinki, Chugoku, Shikoku, Kyudyu and Okinawa. Each group set a specific theme to address such as internships and career development. For the Chubu area, which focuses on improving active learning and internships, the universities selected to participate in the project consist of: Aichi Sangyo University, Aichi University Junior College, Chubu University, Doho University, Fukui University, Gifu University, Kanazawa Institute of Technology, Kanazawa University, Kinjo College, Meijo University, Mie University, Nagoya Sangyo University, Nagoya University of Business and Commerce, Nihon Fukushi University, Shizuoka Eiwa Gakuin University Junior College, Shizuoka Institute of Science and Technology, Shizuoka University, Sugiyama Jogakuen University, Tokai University Junior College, Toyohashi Sozo University, Toyohashi Sozo Junior College, Toyama International University and Toyama Prefectural University. These universities were selected based on the feasibility of their project proposals by the Committee of Improving Higher Education for Meeting Industrial Needs established by the Ministry of Education, Culture, Sports, Science and Technology.

Since the project started, the participating universities have periodically met and discussed challenges related to the project's objectives and strategies to address these challenges. In order to review challenges and strategies, the Second Conference of Industry-Universities took place in Nagoya, Japan on November 14, 2013. This paper analyses challenges and strategies documented in the reports submitted by the universities.

2. Employability

The term employability can be interpreted in multiple ways. The Confederation of British Industry (2013), for example, defines it as the skills and attributes "that help people respond to the changing demands of the workplace and contribute positively to their employer's success" (p. 4).

The skills and attributes related to employability vary. For instance, Andrews and Russell (2012) and Burrows and Wragg (2012) cite the following as employability skills and attributes: self-management, team working, business and customer awareness, literacy, communication and problem-solving skills. Wagner (2008) argues for what he calls the Seven Survival Skills essential for students to seek decent employment and become active citizens in democratic societies. The Seven Survival Skills that Wagner identifies are as follows: 1) critical thinking and problem solving, 2) collaboration across networks and learning by influence, 3) agility and adaptability, 4) Initiative and entrepreneurialism, 5) effective oral and written communication, 6) accessing and analysing information and 7) curiosity and imagination. These generic skills serve for developing employability (Hager et al., 2002).

Japan's Ministry of Education, Culture, Sports, Science and Technology (2013) calls these skills *Syugyo ryoku*—the skills that university graduates should possess for the preparation of becoming socially and professionally independent. Similarly, the Ministry of Economy, Trade and Industry (2013) calls these skills *Syakaijin kisoryoku*—fundamental skills necessary to work with diverse individuals in the workplace and society. In order for university students to acquire these skills, the project Improving Higher Education for Meeting Industrial Needs focuses on 1) improving teaching and learning through active learning and 2) strengthening partnerships among universities, industry, local governments and other relevant stakeholders.

3. Method

In order to examine the challenges and strategies towards improving students' employability skills, survey questionnaires were sent out to representatives of twenty-three universities that participate in the project. The survey took place between June and September 2013. In the survey questionnaires, twelve issues were selected for inquiry: industrial needs, partnerships, internships, active learning, faculty development and training, internal consensus, organisational support, assessment, changes in student quality, generic skills, the first year seminar and leadership. These issues were selected by the Project Leader from Mie University because they were often raised in various meetings throughout the first year of the project. There may be other challenges but all members agreed upon these challenges to be addressed collectively.

Identifying *industrial needs*—skills that industry seeks from higher education—is one of the primary purposes of the project. As Sambell et al. (2013) describes, "any mismatch between what is taught and assessed in higher education and the skills required for the world of work is clearly problematic" (p. 13). In order for universities to identify industrial needs, establishing *partnerships* with industry is crucial. The majority of professors do not have work experience outside academia (Tsuji, 2013), and Japanese universities and companies have traditionally been distant from one another (World Intellectual Property Organisation, 2007). For instance, in the US, it is common that professors work for companies or universities sell their expertise to companies. This kind of practice had been taboo, at least until recently, in Japan. It was only the early 2000s when universities became independent administrative corporations and started collaborating with companies (Hatori, 2010). In case of Tokyo University, for example, an office for industry-partnerships was established in 2002 and only one employee was assigned for that task at that time (Ishikawa, 2011). It is also common that universities have companies or entrepreneurial activity inside their organisations in the US (Fenn, 1999; Stanford University, 2012). Columbia Innovative Enterprise at Columbia University or Harvard Innovation Lab at Harvard University is a prime example. Having companies within universities was out of question in Japan and the number of collaborative research endeavours between companies and universities has still been limited (Tokyo University, 2012). This isolation from industry has been a bottleneck for universities attempting to educate students in ways that meet the demands of industry seeking employees from the pool of university students (Oba, 2007). The disconnect leads to only a small number of university trained individuals being suitable for industrial needs.

Strengthening relationships with local governments is also important as many graduates go to work for local public services such as the city hall or other municipal organisations (Hunter, 2013; Ian, 2000; Parker & Lingling, 2013). Davies (1998) finds important partnerships between companies, public agencies and universities. He argues that developing employability skills necessitates "the participation of employers in the education of their employees, defining its scope and objectives, possibly influencing the curriculum, and certainly engaging in its delivery, whether in the company or on campus" (p. 308).

Despite its recent popularity, *internships* are another field that Japanese universities had disregarded until recently. According to Ministry of Economy, Trade and Industry (2013), whilst more than 70% of Japanese universities offer opportunities to their students as interns, only 2% of the university student population undergoes internships. That is, each university offers few internships. In the US, 70% of university students do internships. The duration of internships is also short with the average of being only two weeks in Japan, as

opposed to 1 to 12 months as common in Europe or North America. This situation further demonstrates that universities need to develop stronger partnerships with industry and local government (Akomaning et al., 2011).

Active learning such as problem/project-based learning (PBL) is considered important to develop the aforesaid employability skills (Bloom & Kitagawa, 1999; Edwards et al., 2013; Muldoon, 2009; Thompson et al., 2013). Since many faculty members do not receive formal training in teaching and are not familiar with active learning (Rutherford, 2012), its promotion requires *faculty development and training*. Hunter (2006), for example, cautions that "traditional graduate training for faculty rarely includes courses on teaching pedagogy" (p. 11). As a result, "many new faculty members enter into their teaching responsibilities unprepared" (Ouelett, 2004, p. 135). Even after they start teaching, Wagner (2008) laments, they hardly ever have opportunities to learn how to teach. Nonetheless, involving faculty in instructional development and making an *internal consensus* among them has traditionally been difficult (Brent & Felder, 2001). With professional practice required, Davies (1998) argues that "the working lives of academics are likely to be changed" (p. 313). Without *organisational support*, however, active learning will not become a common practice among faculty with different pedagogical philosophies.

Assessment is important to examine whether universities develop employability skills effectively in their students. Burrows and Wragg (2013), for example, argue that "…the recent education reforms, such as higher tuition fees, has made students more discerning with the effect that universities will have to respond to customer demands by offering courses that ultimately result in a more measurable employability outcome" (p. 169).

Due to the massification of college education—huge demands for higher education (Davies, 1998), *change in students' qualities* has been noted. Arum and Roksa (2011) report an increase of unqualified students, which lowers the academic standard. "In recent decades, 30 percent of students with C grades in high school and 15 percent with grade point averages of C minus or lower have been admitted into four-year colleges" (p. 55).

As more and more university entrants lack *generic skills* such as critical thinking, analytical reasoning, problem solving and writing skills, students drop out and find difficulty in finding employment (Lundetræ, 2011). In Japan, McVeigh (2002) describes that 20% of Japanese private university students are unable to solve math questions at the primary level. He continues that many university students are "not well-trained in writing critically, arguing coherently, or expressing their views with conviction or verve." (p. 13).

First-Year Seminars or *First-Year Experience* (FYE) is important in dealing with students in transition as "a significant percentage drop out at some point of their first year, making the first year a high risk period when it comes to student retention" (McIntyre et al., 2012, p. 110). It is because, as McVeigh (2002, p. 181) explains, Japanese students are used to being guided and ordered throughout the K-12 education and thus many students "have not developed an internal psychological compass that might direct their attention to studying on their own."

Leadership is crucial for putting theory into practice, transforming good intention into effective action (Wood, 2011). As Terzioglu (2011) defines, leadership is to influence a group towards the achievement of goals and "is indeed an element vital to the success of any organisation, including universities" (p. 444). Their responses were compiled in the report for the Second Conference of Industry-University Partnerships.

4. Results

Although we received at least one response for each of the twelve issues, this section focuses only on the first eight challenges listed in Table 1 because the responses from universities about change in students' qualities, basic academic skills, first year seminars and leadership were limited and require further investigation.

Table 1. Challenges to be addressed by Japanese universities

Challenges	Response No.
Active Learning	19
Partnerships	13
Industrial Needs	12
Internships	11
Internal consensus	11
Faculty Development and Training	10
Organizational Support and Environment	9
Assessment	6
Change in students qualities	5
Basic Academic Skills	4
First Year Seminars	3
Leadership	1

4.1 Active Learning

Out of twenty-three universities, nineteen universities indicated the implementation of active learning as a challenge. Many universities reported that their faculty members are not familiar with or lack skills for employing active learning in their courses. In Shizuoka University, for example, few faculty members can teach project-based learning (PBL) subjects. As a result, the number of PBL courses is small.

Sugiyama Jogakuen University possesses insufficient data on the impact of active learning. The university thus started collecting data on its impact from five courses employing active learning. They conducted surveys with the faculty that teach and students that take these courses. They reported to analyse the data and utilise it for faculty development and training.

4.2 Partnerships

With regard to partnerships, thirteen universities reported that establishing industry-university partnerships is an issue. At Toyama Prefectural University, its faculty members periodically hold meetings with local companies to understand and analyze industrial needs. Toyohashi Sozo Junior College's faculty holds meetings with local industry to ascertain the industrial needs and disseminate the information inside the Department of Management. Shizuoka Eiwa Gakuin University Junior College reported that in collaboration with local economic organisations, they invited professionals as lecturers and created courses for career development. They also develop internships through partnerships with local industry.

4.3 Industrial Needs

As to industrial needs, twelve universities mentioned that identifying the industrial needs is an issue. Many conducted surveys and interviews with companies to understand what kinds of skills they seek in recruiting employees. Toyoma Prefectual University conducted research on how companies train their new employees and intends to apply similar training methods in their curriculum to enable their students to acquire employability skills.

Mie University conducted surveys with 530 companies and inquired what skills and/or attributes they expect university graduates to have. Findings show that apart from expertise/specialised skills, the skills or attributes commonly sought by these companies are: motivation (44.5%), manner and attitudes (44%), collaboration skills (40.2%) and pro-activeness (39.6%). They consider less important the following skills: logical thinking (14.7%), critical thinking (7.2%), presentation skills (7.2%), foreign language skills (2.6%) and discussion skills (1.7%). It may be noteworthy that despite some literature emphasising the role of generic skills in developing employability, these skills are indeed relatively disregarded by companies.

Mie University also conducted surveys with 272 faculty members about what kind of skills they want their

students to acquire. The findings are as follows: broad education knowledge/liberal arts (65.6%), pro-activeness (58.1%), manner and attitudes (41.9%), ethics (40.5%) and motivation (30.1%). The skills supported by both industry and faculty members are: motivation, pro-activeness and problem-solving skills. The skills expected by industry but not by faculty are communication skills. In contrast, the skills that are expected by faculty but not industry are logical thinking and critical thinking skills.

4.4 Internships

Internships were reported as a challenge by eleven universities. Nihon Fukushi University, for example, reported that their students are not proactive during their internships. In order to address this type of issue, Gifu University asked companies in advance about their expectations as well as job descriptions and matched participating students to these needs. Also, the university conducted assessment on the skills of these students to confirm beforehand whether they demonstrated enough skills to meet companies' expectations.

Some universities claimed difficulty in evaluating the impact on students undergoing internships. In the case of Kanazawa University, for example, the university's coordinators attended the meeting with companies' personnel held on the last day of internships; however, the impact has yet to be measured in any way. Kanawaza Institute of Technology develops hybrid internships, which is a combination of work-based internships with PBL subjects: the university asks a company or a local government to provide students with a relevant problem and students elaborate upon solutions towards the problem through their internships in a company or a city hall.

4.5 Internal Consensus

In promoting active learning and internships, six universities reported internal consensus as a challenge. As Mie University reported, many faculty members lack recognition that universities are demanded to develop employability skills. In Shizuoka Institute of Science and Technology, for example, many faculty members oppose changes in their teaching methods as well as career development education. In order to address this issue, Shizuoka Eiwagakuin Junior College has formed a working group to make an internal consensus on how to nurture students' employability skills.

4.6 Faculty Development and Training

Faculty development and training are mentioned by ten universities, particularly in relation to active learning because, as already mentioned, many faculty members do not know how to employ active learning. Kinjo College, for example, reported that 20% of its faculty does not know about active learning and 30% does not understand its significance. Toyama International University reported that their faculty members lack recognition of the importance of active learning. The university thus provides them with opportunities to observe other faculty members employing active learning.

4.7 Organisational Support

Related to internal consensus and faculty development, organisational support was claimed as a challenge by nine universities. According to Shizuoka University, the fact that the faculty does not fully understand the industry needs on employability skills and lacks faculty that can teach project-based subjects is an organisational issue. At Doho University, the significance of understanding industrial needs is not commonly shared by faculty. The Head of the Department of Social Welfare works towards making internal consensus and urges all faculty to consider industrial needs.

4.8 Assessment

Assessment was mentioned as a challenge by six universities. Given that many more universities (e.g., Kanazawa University, Meijo University, Nagoya Sangyo University) mentioned difficulty in measuring the impacts of active learning and internships, arguably more universities are interested in this issue.

Regarding the assessment of generic skills, Toyohashi Sozo University, Tokai Junior College and Nagoya University of Commerce and Business employ Progress Report on Generic Skills (PROG), an assessment tool to measure generic skills. Along with PROG, Toyohashi Sozo University employs students' self-evaluation, peer review and faculty assessment to triangulate the result of PROG.

5. Discussion

The challenges and strategies towards employability of the twenty-three universities were further discussed during the Second Conference of Industry-University Partnerships that took place in Nagoya, Japan on November 14, 2013. 122 faculty members and administrators as well as representatives from five companies such as Komatsu and Chubu Electric Power Company participated in the conference. The challenges and issues were summarised into four areas: active learning, internships, organisational support and assessment. Whilst the

first two are at the top of the list in the report discussed in the previous section, the latter two are ranked relatively low; however, these four broad areas included aspects of all issues addressed on the list. In order to identify and nurture the skills that industry seeks, internships and active learning are considered increasingly important. Organisational support from top management, faculty members and university administrators is essential. A lack of assessment on the impact of active learning and internships was also pointed out by many universities on the report.

During the discussion drawn from the report at the conference, several issues were addressed. Some participants, including those from industry, questioned: "What is the goal of the project Improving Higher Education for Meeting Industrial Needs? What would be considered a success of this project?" They continued: "Whilst meeting industrial needs is one of the major objectives of this project, the role of universities should not be limited to train students exclusively in the way that industry wants." As the research at Mie University on industrial needs indicates, *syakaijin kisoryoku* or generic skills such as critical thinking, logical thinking, presentation and discussion skills are, despite their importance for developing employability skills, not considered very important by companies, though they do consider communication skills highly important. A representative from industry requested, "We would like employees with diverse background. We are afraid that students are molded into the framework of *syakaijin kisoryoku* and lose their individual uniqueness."

These statements echo Gibbs (2000) and Andrews and Russell (2012). Gibbs argues that whilst the purpose of higher education is "the creative revelation of an individual's potential," employability "is not necessarily creative or fulfilling of employee's potentialities nor, paradoxically, necessarily for the best benefit of the employer" (p. 561). Andrews and Russell (2012) questioned, "to what extent are HEI [Higher Education Institutes] responsible for developing employability skills?" (p. 43).

Another issue raised was a lack of assessment of employability skills. PROG, employed by some participating universities is relatively new, with its validity still in question. GPAs have also been disregarded in the employment process. Representatives from industry reported that they do not examine GPAs carefully because GPAs do not tell the personalities of the applicants. "We would like GPAs that show personal components."

The significance of communication skills is undoubtedly highly regarded by both industry and universities. Yet, some participants showed their concerns that university faculty are the ones who need training the most in this area. One participant said, "Currently, universities advocate going global, innovative, and communicative; yet are university faculty global, innovative, and communicative?" This goes back to the issue of faculty development, but is it even possible for faculty to become, if currently so, global, innovative, and communicative in the future? Further research is required to answer this question.

6. Conclusion

The issues discussed in this paper are all interrelated. Partnerships are important often to understand industrial needs. In order to nurture skills that industry demands, active learning and internships (which also require collaboration with industry) are employed. In order to promote active learning and internships effectively, internal consensus, faculty development, organisational support and assessment all play important roles. Yet as many participants at the Second Conference of Industry-University Partnerships questioned: what would be considered a successful outcome of this project? Meeting the demand from industry is a benchmark; however, the participants from industry as well as those from academia argued that universities should add unique values to students other than employability skills. Otherwise, universities would no longer be universities but merely technical institutes.

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