

Competence-Based Approach Reconsidered¹

Abstract:

The purpose of this paper is to consider the role of university education appropriate for the knowledge society by critically reconsidering the existing competence-based approach. Traditionally, higher education research on university and work has ignored the substantial relationship between learning outcome and performance of work, leaving them in a kind of “black box”. The competence-based approach is of great significance because it tries to directly address the theme of how university and work are linked through competence. Two issues are examined based on the REFLEX survey. Firstly, the rights and wrongs of evaluating university education from the viewpoint of the gap between competence required in the workplace and competence acquired by individual are examined. Secondly, the pros and cons of judging university education from the viewpoint of competence “generally required by companies” are discussed through “happy worker approach”.

Key words:

Competence-based approach, Gap-based approach, Happy worker approach, Occupational relevance of university education, REFLEX

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Research background

Interest on university education has been growing globally. The quality of university education has traditionally been measured by its inputs such as students and educational conditions, or the reputation of the faculty’s research. However, the circumstances surrounding the quality have changed significantly, reflecting the following factors. The first is universalization of higher education. Universalization has increased diversity of the academic performance and the learning goals of students, causing the quality of education to become an important issue. The second is politicization. Universalization of higher education increased public funding, creating needs for financially relevant quality, in other words, accountability for the educational outcome. The final factor is the advent of knowledge society. In the knowledge society, there has been a growing demand for human resources who thrive in the global economy, not just satisfying the minimum standard. This means there is a need for socially relevant quality. Universities are required to

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respond to these issues and needs for quality through their provision of academic education (OECD 2008a; 2008b).

The above describes the multilayered nature of the circumstances surrounding the quality of university education, implying the necessity for its comprehensive analysis. This paper addresses the social relevance of university education, specifically the occupational relevance. Concerning the occupational relevance of university education, the traditional focus was to enhance the match between academic qualifications and occupational categories. However, in a knowledge society, the match between the competence acquired during study time the competence required by the job or society will increasingly be seen as important. The issue has shifted from “university and employment” to “university education and job” (Teichler 1988).

Today, there are initiatives such as OECD feasibility study for the international assessment of higher education learning outcomes (AHELO), which aims to determine or guide the direction of the outcome of university education. It should be noted that such an approach is one of the options. An alternative approach is to focus on the alumni, the stakeholder other than the government, in order to evaluate the learning outcome. The alumni survey enables access to information such as the quality of teaching and learning during study time, as well as the learning outcome. It can also clarify an evaluation of the individual’s educational/learning experience from his/her work experience point of view. To discuss the occupational relevance of university education, it is more meaningful to use evaluations based on work experiences, rather than using achievement level at the time of graduation.

In the following sections, two issues are examined based on the REFLEX survey, in order to seek an appropriate method to discuss the occupational relevance of university education, with a focus on competence. Firstly, the rights and wrongs of evaluating university education from the viewpoint of the gap between competence required in the workplace and competence acquired by an individual are examined. Secondly, the pros and cons of judging university education from the viewpoint of competence “generally required by companies” are discussed. Four countries, Japan, the UK, Germany, and France, have been chosen for comparative analyses.¹

Framework of analysis

Gap-based approach is one of the methods of competence-based approach that has conventionally been used. This approach clarifies competence required in the workplace and competence acquired by each employee, extracts gaps between them, and finds out problems of university education (Paul 2002). For example, in the case that the worker’s level of competence is not as high as that required in the workplace, the gap is understood to mean that the university graduate does not have enough competence required in the workplace.

However, the underlying patterns causing such gaps are not so simple, because the gap is determined by the relative relationship between the job characteristic and the acquired competence. Two scenarios are assumed when the gap is small. The first possibility is that the individual is engaged in work requiring high-level competence, and he/she has acquired the relevant competence. Alternatively, the individual is not engaged in work requiring high-level competence and thus he/she has not experienced any lack of work-relevant competence. Similarly, two assumptions are possible when the gap is wide. The first possibility is that the individual has acquired high-level competence, but is not engaging in work requiring such competence. Alternatively, the individual is engaging in work requiring high-level competence, but has not acquired such level of competence (Table 1). The first question of this paper is to examine this point.

Traditionally, there have been two main streams of thought in the competence-based approach. The first is the company (or employer)-based approach, which examines the role of university education starting from the competence required by the workplace (NCHEMS 2000; Learning and Skills Council 2008). The other is the school (or educator)-based approach, which first establishes the target of the educational institution and the characteristics of the educational contents provided, and builds on these traits to consider

Table 1 Ideal structure of competence gap

acquired competence		required competence		gap	
low	high	low	high	small	wide
	✓		✓	✓	
✓		✓		✓	
	✓	✓			✓
✓			✓		✓

the occupational relevance and role of university education (Boys et al. 1988; Brennan and McGeevor 1988). It should be noted that neither approaches reflect the viewpoints of graduates or workers, as they are based on the needs of the employer or the educator. Similarly, the gap-based approach simply conducts comparative analysis of competence without incorporating the factors such as the working styles preferred by the individuals. In this sense, it also lacks the viewpoint of graduates or workers.

Thus, the second question of this paper is to consider the occupational relevance of university education from the viewpoint of graduates or workers as an alternative to the company-based and school-based approaches.² In other words, this third way approach is based on the following hypothesis, “While higher education is becoming more prevalent, failure to offer jobs that suit the graduates’ way of thinking or behaviour will result in preventing effective use of human resources.” Therefore, the “HW (happy worker) approach” to examine where and how “happy workers” among university graduates are working is hypothetically proposed and the relevance of such an approach is examined. It should be noted that the use of “happy” is not based on a rigorous definition, but rather a subjective personal feeling of graduates or workers.

Gap-based approach reconsidered

The REFLEX survey asks the current level of acquired competence and the competence level required in the workplace, with regard to a total of 19 items related to knowledge, skill, and attitude. Considering the Japanese propensities toward responding to surveys, the original 7-point scale of the questionnaire has been reduced to a 5-point scale by combining scalar points 1 and 2 as well as 6 and 7. When the responses to the 19 questions were tallied, the responses toward the acquired level and the required level ranged from a low of 19 points to a high of 95 points. Next, the total points assigned to the acquired level were divided by those of the required level. These then were categorized into four groups, “less than 90%,” “90% to less than 100%,” “100% to less than 110%,” and “110% or more,” in order to generate gap variables.

Figure 1 shows that in Japan, nearly 60% of the participants responded that their acquired level of competence was less than 90% of the required level of competence. Conversely, in the UK, Germany, and

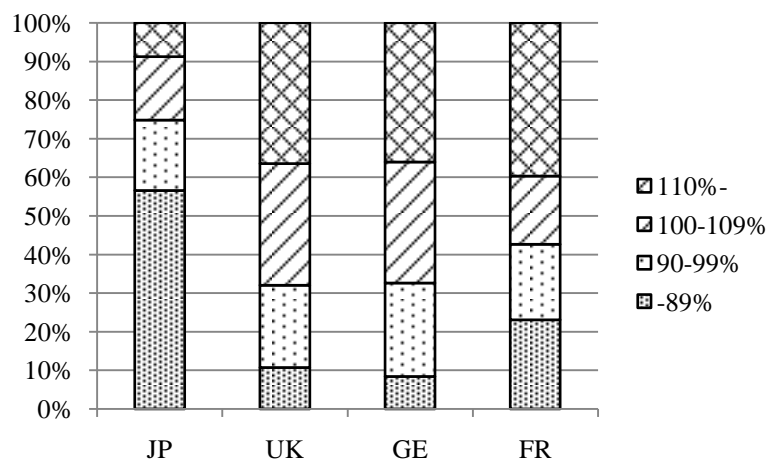


Figure 1 Distribution of competence gap

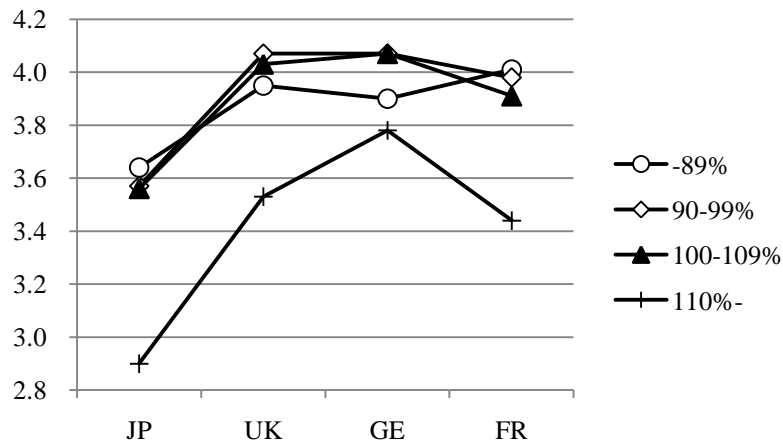


Figure 2 Utilization of competence by competence gap

France, responses of a majority of the participants resulted in a gap ratio of 100% or more, which means that their acquired level of competence exceeded the required level of competence. Should this result be interpreted as the occupational relevance of university education in Japan being low, whereas university educations in the other countries are sufficiently effective? Or, is it a reflection of over-education in the latter group of countries?

In order to verify this point, the relationship between gap variables and the utilization of competence (the average score from the 5-point-scale valuation) has been examined (Figure 2). For the group whose gap is 110% or more (the acquired level is at least 10% higher than the required level), the utilization of competence was low in all of the countries. Such cases indicate the possibility that the respondent is not engaging in the type of work corresponding to his/her acquired level of competence. For the remaining groups whose gap was lower than 110%, there was no significant difference in the utilization of competence. However, in Japan and France, the groups with lower levels of acquired competence exhibited higher levels of competence utilization. Conversely, in the UK and Germany, the utilization of competence was higher in groups with a small gap (90% to less than 110%).

The results lead to two hypotheses. First, the respondents whose gap is 110% or more are less likely to be engaged in work requiring high levels of competence. Second, in Japan and France, respondents who acknowledge their lack of acquired competence are more likely to be engaged in work requiring high levels of competence. In order to verify these hypotheses, the relationship between gap variables and the level of competence required (the responses have been categorized, for each country, into three groups—those with high, medium, and low degrees of required competence based on the sums of scores) (Figure 3). In all countries, as the level of required competence increases, the ratio of the respondents who aware of their lack of acquired competence is higher. In other words, those engaging in work requiring high levels of competence tend to be more aware of their lack of competence. However, in the UK and Germany, the group requiring high levels of competence included a significant number of respondents with a small gap (90% to less than 110%). Another notable point was that the group requiring low levels of competence had a significantly higher proportion of respondents with a large gap (110% or more). This trend was especially marked in the UK, Germany and France.

The above indicates that the competence gap does not necessarily signify low relevance of university education to work. In cases where the respondents feel that they are overqualified in terms of competence, they are less likely to be engaged in work requiring high levels of competence, with low levels of acquired competence utilization. However, there is a different relationship in each country between gap variables and the recognition of whether acquired competence is utilized and whether the respondents are engaged in work requiring high levels of competence. In the UK and Germany, the survey results showed that the

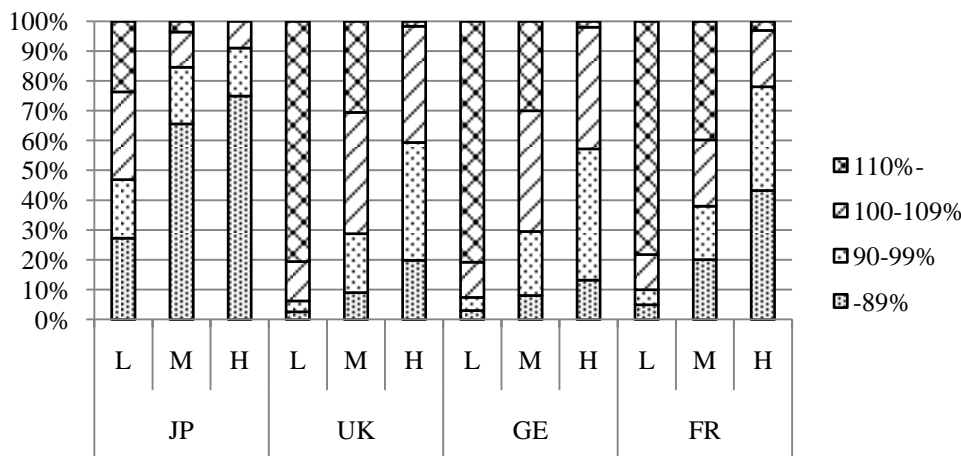


Figure 3 Competence gap by level of required competence

smaller the gap, the higher the level of utilization of acquired competence and employment in work requiring high levels of competence. Conversely, in France and Japan, the higher the gap, the higher the level of utilization of acquired competence and employment in work requiring high levels of competence.

Happy worker approach; company-based approach reconsidered

The advent of the knowledge society does not only mean that knowledge becomes more important in society, but it also means that the number of workers who compose or create knowledge increases by the expansion of higher education. In other words, the knowledge society signifies a society that needs to make better use of knowledge workers. This means that it is important to consider the relevance of university education to work from the viewpoint of the appropriate way of working for university graduates. Therefore, the “happy worker approach” is adopted.

Three elements that enhance both satisfaction and the exercise of competence are extracted; “opportunity to learn new things,” “new challenges,” and “work autonomy,” all of which are related to “internal compensation” rather than “external compensation.” Based on the point of these elements, a “happy worker index” is set. Three variables have been generated using a 5-point-scale system. Taking into consideration the Japanese tendencies toward responding to surveys, scalar points 1 and 2 combined were converted to 1, 3 converted to 2, and 4 and 5 combined were converted to 3. The response to the happy worker index ranged from a low of 3 points (scoring 1 point for all 3 elements) to a high of 9 points (scoring 3 points for all 3 elements). The group which scored 9 points in the happy worker index was labelled SUPER-HW (hereinafter referred to as “SUPER”), those scoring 7 to 8 points were labelled as MIDDLE-HW (hereinafter referred to as “MIDDLE”), and those scoring 6 points or less as LOW-HW (hereinafter referred to as “LOW”).

Examining the distribution of happy workers by each country (Figure4), the ratio of LOW in Japan was high at 40%, implying that there are few happy workers. The country with the highest proportion of happy workers was Germany, with 45% categorized as SUPER. The results for the UK and France were between Japan and Germany. Although it is meaningful to seek the cause of the different distributions of happy workers by country, the main focus of this paper is to re-evaluate the traditional competence-based approach by examining similarities and differences with the happy worker approach. Thus, the next step is to examine the accuracy of using traditional occupation-related variables such as wage and type of contract in comprehending happy workers.³ Subsequently, a comparison between the generally required competence and those required for the happy workers will be made, in order to seek the future direction of university education with occupational relevance.

Figure 5 shows the relationship between gap variables and happy workers. In the three countries

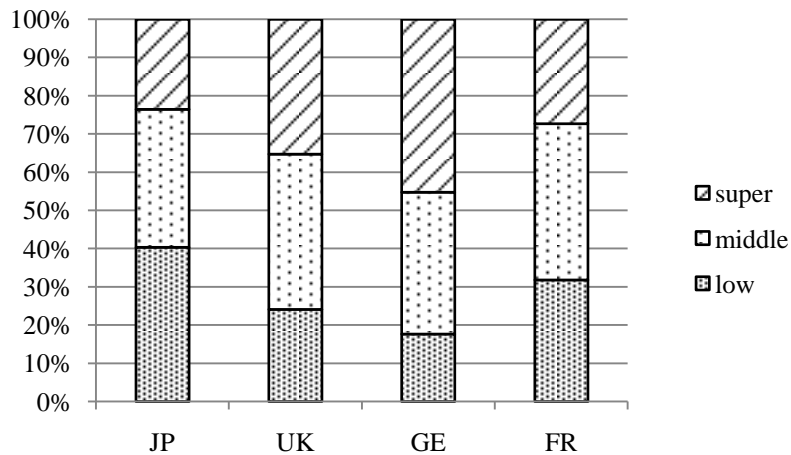


Figure 4 Distribution of happy worker

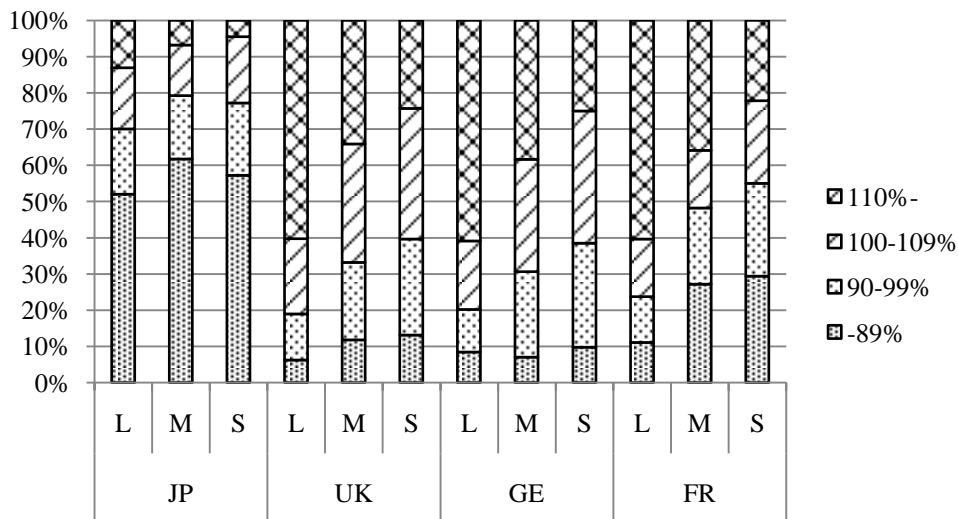


Figure 5 Competence gap by happy worker

excluding Japan, there is a clear relationship between the two. Groups with higher happy worker scores tend to have a lower share of respondents whose gap is 110% or more, and have a higher share of respondents whose gap is between 90% or more but less than 110%. Also, happy workers are more likely to feel a lack of acquired competence versus required competence.

Figure 6 shows the relationship between monthly earnings (from contract hours in main employment) and happy workers. In the UK and Japan, SUPER respondents tend to earn higher wages. However, it should be noted that not all SUPER earn high wages. In Germany and France, the relationship between earnings and being a happy worker is not clear.⁴ Normally, earnings are viewed as a proxy indicator for the job suitable for a university graduate or that requiring high levels of competence. However, earnings as external compensation do not necessarily explain a happy worker based on internal compensation.

Similarly, type of contract is not necessarily appropriate as a variable to explain a happy worker. One of the reasons may be because for all four countries, the ratio of respondents with unlimited-term contracts is significantly high, at around 80%. However, it should be noted that the ratio of SUPER among those working under unlimited-term contracts is not necessarily the highest. The ratio of SUPER is slightly higher in the cluster with fixed-term contracts.⁵ In addition, respondents categorized as SUPER work longer hours than their counterparts in the MIDDLE or LOW categories.⁶ Those in the SUPER category are likely to work longer hours because they are committed to their work, therefore, it is highly possible that

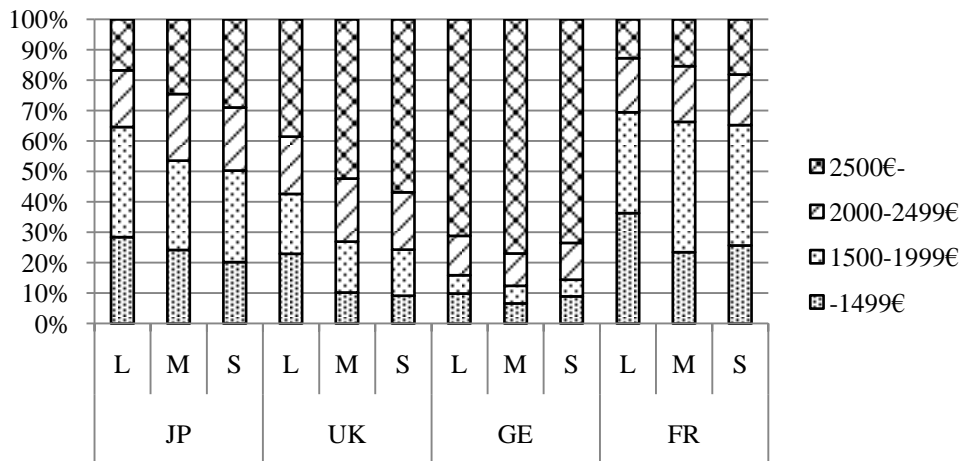


Figure 6 Monthly earnings by happy worker

he/she spontaneously chooses to work long hours. A happy worker is not a workaholic in the negative sense of the term and he/she is not in a bad working condition with long working hours.

Finally, competence relevant for increasing internal compensation is considered and it will be compared with the findings of the company-based approach. The 19 items related to knowledge, skill and attitude (converted to scalar points using the same approach as above) have been used to extract competence required by the company-based approach, that is, competence required of all employees in the workplace, and the top six items are shown (Table 2). The shaded cells correspond to the knowledge, skill, and attitude shared by at least two countries. In all countries, items such as the “ability to use time efficiently,” the “ability to work productively with others,” the “ability to make your meaning clear to others,” the “ability to coordinate activities,” and the “ability to perform well under pressure,” occupied the top ranks.⁷ These are threshold competence that forms the basis of all types of work.

The difference between the responded values of SUPER and LOW has also been calculated and the top six items have been determined as well (Table 2). The result shows that the following competence clusters have high levels of affinity with SUPER in all countries: the “ability to rapidly acquire new knowledge,” “alertness to new opportunities,” the “ability to come up with new ideas and solutions,” “willingness to question your own and others’ ideas,” the “ability to present products, ideas, or reports to an audience.” These are differentiated competence that separates those who are happy workers and those who are not.

Threshold competence and differentiated competence differ in their contents. It is possible to extract threshold competence required for all workers using the company-based approach. However, they are not necessarily the group of competences that enable graduates to become happy workers. Considering which competence cluster should be enhanced through academic training provided by university education, especially competence necessary to enable graduates to be happy workers should be given priority. The competence clusters generally required by companies do not necessarily illustrate the model of human resources development through university education for a knowledge society.

Conclusion

Traditionally, higher education research on university and work has ignored the substantial relationship between learning outcome and performance of work, leaving them in a kind of “black box.” The competence-based approach is of great significance because it tries to directly address the theme of how university and work are linked through competence.

However, it is true that the current method of the competence-based approach has its own limits, when trying to judge whether the present university education system is useful or not in the context of the knowledge society and when discussing the appropriate university education system for the future, in order

Table 2 Required competence for all graduates and for happy worker

a. required competence for all graduates			
JP	UK	GE	FR
ability to make your meaning clear to others	ability to use time efficiently	ability to perform well under pressure	ability to use time efficiently
ability to use time efficiently	ability to work productively with others	mastery of your own field or discipline	ability to make your meaning clear to others
ability to work productively with others	ability to perform well under pressure	ability to use time efficiently	ability to work productively with others
ability to rapidly acquire new knowledge	ability to make your meaning clear to others	ability to coordinate activities	ability to rapidly acquire new knowledge
ability to coordinate activities	ability to coordinate activities	ability to rapidly acquire new knowledge	analytical thinking
ability to come up with new ideas and solutions	ability to use computers and the internet	ability to work productively with others	ability to perform well under pressure
b. required competence for happy worker			
JP	UK	GE	FR
ability to present products, ideas or reports to an audience	ability to present products, ideas or reports to an audience	ability to come up with new ideas and solutions	ability to come up with new ideas and solutions
alertness to new opportunities	willingness to question your own and others' ideas	willingness to question your own and others' ideas	ability to write reports, memos or documents
analytical thinking	alertness to new opportunities	ability to present products, ideas or reports to an audience	alertness to new opportunities
ability to rapidly acquire new knowledge	ability to come up with new ideas and solutions	alertness to new opportunities	ability to write and speak in a foreign language
ability to come up with new ideas and solutions	ability to write reports, memos or documents	analytical thinking	willingness to question your own and others' ideas
knowledge of other fields or disciplines	ability to rapidly acquire new knowledge	knowledge of other fields or disciplines	ability to rapidly acquire new knowledge

to secure the relevance to work.

Critical reconsideration of the gap-based approach is to raise questions in simply looking at the divergence from competence required in the workplace. In cases where the individual feels he/she is overqualified, the results indicated that he/she was less likely to be employed in work requiring high levels of competence, with low levels of acquired competence utilization. However, in the UK and Germany, the respondents with a smaller gap tended to be employed in appropriate types of work, whereas in France and Japan, those with a wider gap were considered more likely to be employed in appropriate types of work. In order to precisely identify the meaning of gap, it is necessary to typify the gap between acquired competence and required competence and further examine its relationship with other job-related variables.

The happy worker approach presents issues stemming from starting with an analysis of competence itself by the company-based approach. If university graduates select their work styles with higher priorities on internal compensation than external compensation, observations using traditional variables such as wage and type of contract will not suffice. This is why there is increased attention on the competence required in the workplace. However, it should be noted that competence required of all employees in a workplace is different from competence enabling them to be happy workers. It is critical to recognize the difference between threshold competence and differentiated competence in defining and enhancing the quality and excellence of university education.

Many existing studies have discussed the relationship between the university and the knowledge society. In order to discuss the role of university education in the knowledge society in a persuasive manner based on empirical research, without falling into the pitfall of relying on impressions or jumping to new interpretations/explanations, the only possible method is through assembling factual data for in-depth validation of the relationship between the knowledge society and the university, as pointed out by Egbert (1999) and Välimaa (2008). This paper takes a small step in that direction.

Notes

1. The survey target was ISCED5A Bachelor level graduates in Japan, the UK and France. In Germany, ISCED5A Master level graduates were included, for reasons such as to balance the field of studies and to ensure an adequate number of samples. Although the responses from the Bachelor and Master level graduates showed differences, it was not considered as a critical problem for the purpose of comparison with the other three countries.
2. Bennett (1994) proposes the concept of life-world competence, which aims to overcome the conflicts generated by the two opposing competence axes, operational competence and academic competence. The approach adopted in this paper is close in the sense that it aims to aufheben the conflict between the company-based model and school-based model, and is based on the viewpoint of the graduates' self-actualization.
3. Florida (2003) points out that people in the creative class, to which many highly-educated people belong, tend to place special emphasis on internal compensation.
4. The samples from Germany include many respondents whose monthly earnings exceeded €2,500. Respondents who earned more than €2,500 were regrouped in a new category for further analysis, but it did not provide a clear result that proves happy workers earned higher wages.
5. The proportions of SUPER in unlimited-term contracts and fixed-term contracts, respectively, for each country surveyed were: Japan (23%, 24%), the UK (35%, 36%), Germany (42%, 48%), and France (25%, 29%).
6. Weekly working hours for SUPER and LOW, respectively, for each country surveyed were: Japan (47.6 hours, 45.1 hours), the UK (43.5 hours, 39.5 hours), Germany (44.0 hours, 42.4 hours), and France (38.7 hours, 36.6 hours).
7. Virtually the same results were derived for SUPER, MIDDLE, or LOW. Therefore, these are considered to be basic competence required for all types of workers.

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