



Title	Undergraduate Education for the 21st Century : What can we learn from graduates?
Author(s)	Nakamura, Masaki; Mochizuki, Taro
Citation	大阪大学大学教育実践センター紀要. 2010, 6, p. 27-32
Version Type	VoR
URL	<a href="https://hdl.handle.net/11094/10354">https://hdl.handle.net/11094/10354</a>
rights	
Note	

*The University of Osaka Institutional Knowledge Archive : OUKA*

<https://ir.library.osaka-u.ac.jp/>

The University of Osaka

# Undergraduate Education for the 21<sup>st</sup> Century

## *What can We Learn from Graduates?*<sup>1)</sup>

Masaki NAKAMURA and Taro MOCHIZUKI

The competencies and skills to be acquired in higher education are surely some of the hottest issues in the contemporary higher education policy across the world. In Japan, the Central Education Council proposed the concept of “competencies guaranteed by bachelor’s degree” (学士力) to specify the qualifications to be fostered through undergraduate education. The authors believe that this governmental “top-down” initiative should be complemented by the “bottom-up” approach that involves a wide variety of stakeholders in higher education, including the direct beneficiaries of higher education, that is, its graduates in the academic year 2006-2007. In order to specify those qualifications and to improve undergraduate education as a whole, we conducted a survey of young Osaka University graduates. In this paper, we will examine their achievements of various qualifications through undergraduate education, and discuss their opinions about the qualifications to be fostered through undergraduate education.

### Introduction

Japanese society is now facing a dramatically changing situation surrounding higher education (MEXT 2009: 3). The college age population (i.e., people who are 18 years old in Japan) has continued to decrease since the early 1990s due to low birthrates. Currently, more than half of all high school graduates attend universities or junior colleges in Japan. The percentages of high school students who hope to continue their studies in higher education and that of the actual advancement rate has been converging in recent years. Any high school graduate who wants to proceed into higher education will have little difficulty fulfilling this desire in the very near future.

According to Martin Trow’s scheme, Japanese higher education is now entering a “universal stage” (Trow 1973), which makes the role of the higher education in Japanese society somehow different from that of the 20<sup>th</sup> century. In addition, the society itself has also changed dramatically since the turn of the 20<sup>th</sup> century. Now, Japanese society is defined as a “knowledge-based society” in which knowledge and creativity play a crucial role. Obviously, the future of a “knowledge-based society” depends heavily on the success or failure of universities that provide new knowledge and education for the people of the society.

### Higher Education for “21<sup>st</sup> century citizens”

In January 2005, the Central Education Council, a consultative body for the Ministry of Education, Culture, Sports, Science, and Technology (MEXT), published a report entitled “Grand design for Japanese higher education” (CEC 2005). In this report, one of the central aims of higher education is defined as forming “21<sup>st</sup> century citizens.” They define 21<sup>st</sup> century citizens as the leading people in the society who will not only have expertise in some areas of specialty but also have a broad range of general knowledge and high ethical sensibility, and will be able to make the society better regardless of its dynamic changes.

Following the recommendation of this report, a subcommittee of the Central Education Council was established to examine the role of undergraduate education, and in December 2008, Central Education Council published a report entitled “Toward the Enhancement of Undergraduate Education” (CEC 2008). In this report, the abilities that would be considered to be indispensable for 21<sup>st</sup> century citizens were discussed, and the qualifications that should be fostered through undergraduate education were speci-

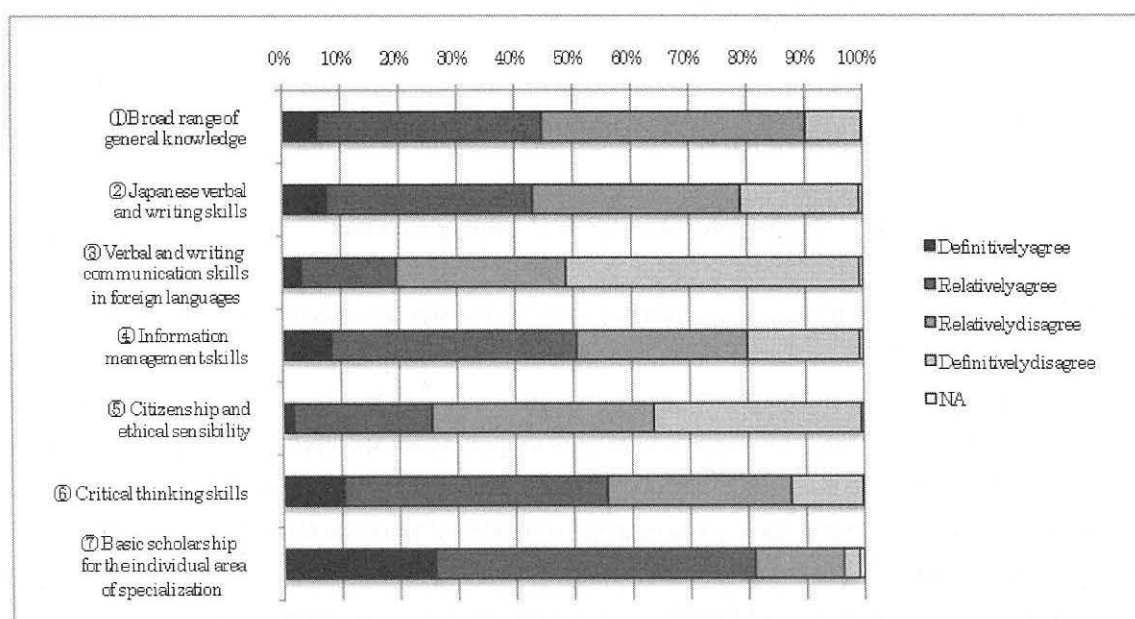
fied. At the same time they proposed a concept that they coined as the “competencies guaranteed by bachelor’s degree” (学士力), which consists of the following generic disciplines: (1) basic knowledge, (2) general and universal skills, (3) attitude and mentality, and (4) ability to solve problems through the application of the previous skills. Examples for general skills as provided in this report include communication skills, numerical competence, information-technology literacy, logical thinking and problem solving ability. Examples of the attitude and mentality consist of self-management skills, teamwork or leadership aptitude, ethical sensibility, responsibility as citizens, and the readiness for a life-long learning. The most important point in this governmental initiative is that they tried to specify the qualifications that should be developed through undergraduate education and clarify their stance to improve the undergraduate education with the above aim in mind.

We admit that the governmental initiative may play a role in reformulating undergraduate education. However, we believe that the process of specifying the qualifications that should be acquired through undergraduate education and the orientation of higher education should be formulated through an open and thorough discussion among various stakeholders in undergraduate education. In other words, the “top-down” initiative should be complemented and compensated by the “bottom-up” approach, deeply rooted in the actual learning and educational process in which a variety of stakeholders engage. That is why we attempted to examine the current issues by focusing on the opinions of the graduates from our university.

### Survey of the graduates from Osaka University

With the aim to specify the qualifications that should be acquired through undergraduate education, we conducted a survey of the graduates from Osaka University. Specifically, we asked the following question: “What do graduates think or feel about their undergraduate education from the viewpoint of their acquired abilities?”

The survey was conducted through a web-based questionnaire system. We asked each professor of Osaka University (726 professors in total) to contact four to six graduates from their laboratories to respond to the survey; two or three graduate students, and two or three working graduates who had graduated within ten years (including those who found academic jobs). As a result, 445 people responded. 285 of which were graduate students, and 160 were employed. The questionnaire was composed of two types of questions. The first set asked them about their achievement of specific qualifications through their undergraduate education at Osaka University, and the second set asked their opinions about the qualifications that should be fostered through undergraduate education.



[Figure 1] Achievement of specific qualifications through undergraduate education

### Qualifications achieved through undergraduate education at Osaka University

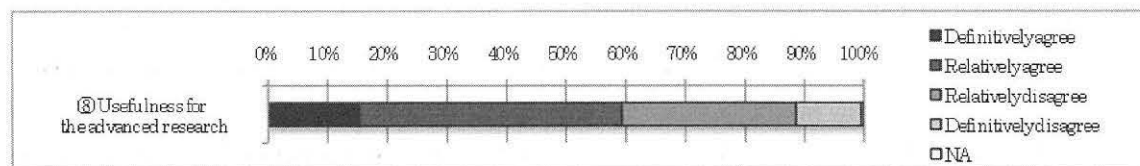
The first set included the following question: "Have you acquired the subsequent qualifications through your undergraduate education at Osaka University?" The qualifications that were listed were: (1) a broad range of general knowledge, (2) Japanese verbal and writing communication skills, (3) verbal and writing communication skills in foreign languages, (4) information management skills, (5) citizenship and ethical sensibility, (6) critical thinking skills, and (7) basic scholarship for the individual area of specialization. The provided answer options were: (1) definitively agree, (2) relatively agree, (3) relatively disagree, and (4) definitively disagree.

The results from the replies to these questions are summarized in Fig. 1. Obviously, several patterns of responses occurred regarding the different qualifications. We classified the qualifications according to the percentage of positive responses, which included the answers "definitively agree" and "relatively agree," and thus created three categories.

The first group is that of the highly appreciated qualifications for which most of the respondents provided positive answers. The second group is that of the moderately appreciated qualifications for which the number of positive answers and the number of negative answers are near equal. The last group is that of the lowly appreciated qualifications for which the negative answers were dominant.

#### Highly appreciated qualifications

Only one qualification, "basic scholarship for the individual area of specialization," could be classified as a highly appreciated qualification. It was highly appreciated by the graduates, which indicates that the undergraduate education at Osaka University might succeed in fostering "basic scholarship." In the related question regarding the usefulness of their undergraduate education for advanced research, six out of ten respondents provided positive answers, which might confirm that Osaka University's undergraduate education did well in this aspect.



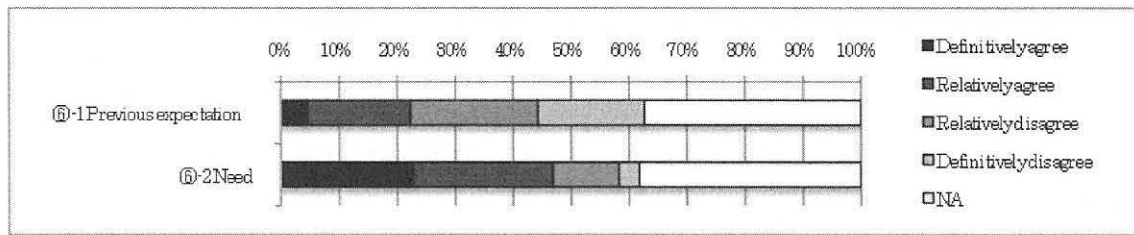
[Figure 2] Opinions about the usefulness for advanced research

#### Moderately appreciated qualifications

The group of moderately appreciated qualifications includes (1) broad range of general knowledge, (2) Japanese verbal and writing communication skills, (4) information management skills, and (6) critical thinking skills. The fact that half of the respondents gave positive answers might indicate that our undergraduate education has played some role in cultivating those qualifications but also indicates that there might be room for improvement in order to better foster those qualifications in all of the students.

As an auxiliary question relating to critical thinking skills, we also asked the graduates if, before starting at the university, they expected to acquire the skills of critical thinking (Figure 3, ⑥-1) and if they thought that these skills were indispensable to acquire at the university (Figure 3, ⑥-2). Although two-fifths of the respondents did not answer these questions, it was noteworthy that most of those who did respond did not expect to learn the skills of critical thinking prior to their entry into higher education, but at least half of them thought that critical thinking was indispensable to learn through undergraduate education. This might confirm the growing interest in critical thinking education.

Regarding the qualification "a broad range of general knowledge," we received several very interesting comments from the graduates. Some examples were as follows:



[Figure 3] Opinions about critical thinking education

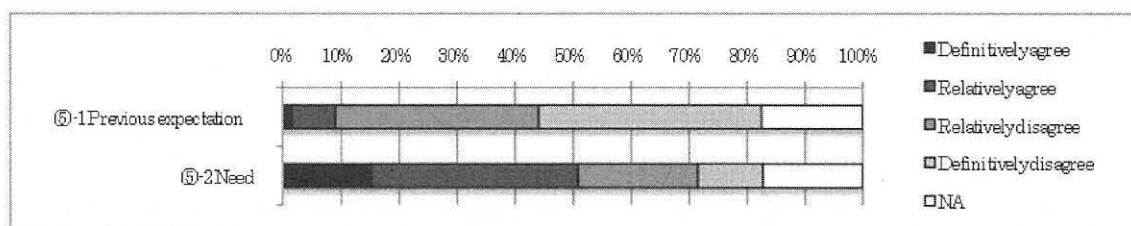
- “[When I was an undergraduate student,] I chose the courses without thinking about their significance in my life.”
- “I didn’t take the class of humanities except foreign languages, but now I regret that I should have learned law and economy.”
- “When I was freshman, it was hard for me to recognize the importance to have a broad range of general knowledge. But, when I began to recognize its significance in graduate school and in [my employment], I found it already difficult to find my time to learn it.”
- “Working in the company, I often hear about economics, e.g., corporate consolidation, stocks, and things like that but I don’t understand them well. If I had taken the related course, that would be very useful.”

These comments reveal the difficulty that freshmen face in recognizing the significance of a broad range of general knowledge; however, a deficiency in this area might be later realized and regretted. So the real challenge regarding a broad range of education might lie in providing the motivation for students to take this aspect more seriously at the time of their study.

#### Lowly appreciated qualifications

The group of lowly appreciated qualifications includes (3) verbal and writing communication skills in foreign languages and (5) citizenship and ethical sensibility. The difficulty in fostering communication skills in foreign languages might be a common challenge in Asian countries, but its significance as well as its difficulties have already been well discussed. In this paper, we pay attention to the area of “citizenship and ethical sensibility.”

As auxiliary questions to this mentality, we also asked the graduates if they expected to acquire skills in the area of “citizenship and ethical sensibility” before they entered the university (Figure 4, ⑤-1) and if they currently thought that this attitude is an indispensable skill to acquire (Figure 4, ⑤-2). The fact which attracted our attention was that half of the respondents reported a positive opinion that such a mentality was fostered through their undergraduate education despite the fact that most of them did not imagine they would acquire this skill before entering the university. Even though many of them felt that they didn’t acquire this mentality in their time as an undergraduate student, an interest is growing for citizenship and ethical sensibility to be fostered through undergraduate education.

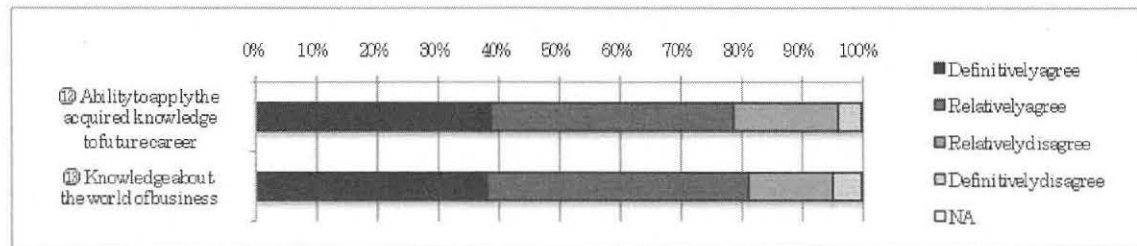


[Figure 4] Opinions about citizenship and ethical sensibility education

#### What did the respondents perceive in regard to the qualifications to be acquired?

In our questionnaire, as mentioned before, we posed a second set of questions including: “Do you think the subsequent qualifications should be acquired through the undergraduate education at Osaka University?” The qualifications were delineated as follows:

(1) the ability to apply the knowledge acquired through undergraduate education to future career and (2) knowledge about the world of business. The results are summarized in Figure 5. Clearly, their answers are mostly very positive. Four out of five respondents definitively or relatively agreed that this kind of business/career related qualifications should be implemented into undergraduate education. However, the point that we would like to discuss is in what sense they thought it desirable to create connections between higher education and the business world. The crucial point we would like to highlight here is that there is no desire to transform the university into a professional school.



**[Figure 5] Opinions about the qualifications to be acquired through undergraduate education**

To begin with, once there is an agreement that undergraduate education should foster applied skills for future careers, what does the term “applied skills” actually refer to? In the comments, some respondents mentioned this topic. According to some of them, the indispensable “applied skills” to be acquired through undergraduate education include presentation skills, technical writing skills, logical thinking skills, and communication skills. Others argued that this refers to the “basic abilities that are valid in a wide range of fields,” “the ability to think through issues by oneself and solve them,” or simply “a way of thinking.” What counts here is the fact that, even though there is a value in the connection between undergraduate education and the world of business, the skills that are assumed to be necessary are not simply technical or professional skills but are rather “basic and general skills” of significance that would not be limited to being effective only in the business world. Some respondents argued that they do not want universities to become mere professional schools, and they attached a high value to universities as higher education institutions. Therefore, making connections between higher education and the business world should not be understood solely from the context of an industry-oriented transformation for higher education but should be discussed from a much broader perspective.

#### What would be achieved by bridging undergraduate education and the world of business?

What did graduates think about the merit of connecting undergraduate education and the world of business? Interestingly, most of the respondents did not necessarily value the advantages that this bridge would bring in the world of business, but rather they emphasized the benefit of adding business functions as a way of improving undergraduate education itself. Typical comments were as follows:

- “Ideas about future occupations give motivation for learning.”
- “It gives objectives to the students and enhances their voluntary learning.”
- “Knowing about the business world contributes to the acquisition of citizenship and ethical sensibility.”
- “It might be ‘the way to relativize’ what they learn in the university.”

Since freshmen generally face difficulties in valuing the broad range of general knowledge, we suggest that a connection with the world of business might give them motivation and a more positive attitude toward learning, and it also might give them a deeper understanding for what they are learning. The connection with the world of business should more properly be called a connection with the real world that the students live in. Therefore, this connection should not be restricted to the so-called world of business but should refer to more than acquiring the practical skills for earning one's bread and butter. It should bring the learning process into a new context and reactivate it.



## Conclusion

By examining the questionnaire of the graduates from Osaka University, we were able to determine the advantages and the weak points of the university's undergraduate education. Moreover, the results of this survey also enabled us to examine the role of undergraduate education for the 21<sup>st</sup> century from the viewpoint of the young graduates. The results may overlap with the vision discussed by the national committee.

We would like to point out the advantages of investigating the viewpoints of young graduates. We think the advantages basically arise from their relatively ambivalent situations, i.e., they are newcomers to the world beyond undergraduate education (or the university) and thus have fresh memories of their education. As newcomers to society, they are facing a variety of difficulties in their jobs or in their lives as graduate students. They might not have been exposed to many of these difficulties while they were undergraduate students. In addition, due to the relatively few years of experience they have had out of the undergraduate educational scheme, they can be reflective regarding their undergraduate education. At the same time, as they have just completed their undergraduate education, they recognize the significance of higher education, which is different from that of a professional school. We believe that this dual "mental" affiliation to two cultures/societies makes their contribution very fruitful.

## Notes

- 1) The draft of this paper was presented at the GUNI-AP 2007 Conference, Excellence with or without a Soul: The Cultivating of Mindful University Graduates, Hangzhou, China, December 2007. The authors thank all who participated in that conference for their valuable comments and suggestions. Main part of the results of the survey is already published in IHERP (2007) for Japanese readers without any discussion about the implication of conducting survey of graduates.

## References

- CEC (Central Education Council) (2005). *Grand design for Japanese higher education*. (*Wagakuni no kôtôkyôiku no shôraizô*).  
[http://www.mext.go.jp/b\\_menu/shingi/chukyo/chukyo0/toushin/05013101.htm](http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/05013101.htm); last accessed on 31 January 2010.
- CEC (Central Education Council) (2008). *Toward the enhancement of undergraduate education*. (*Gakushikatei kyôiku no kôchiku ni mukete*).  
[http://www.mext.go.jp/b\\_menu/shingi/chukyo/chukyo0/toushin/1217067.htm](http://www.mext.go.jp/b_menu/shingi/chukyo/chukyo0/toushin/1217067.htm); last accessed on 31 January 2010.
- IHERP (Institute for Higher Education Research and Practice) (2007). Osaka University. Analysis of the survey of graduate (Sotsugyôsei ankêto no bunseki). In *Student evaluation system: Implementation report, 2004-2006*. (*Gakusei ni yoru Jyugyô hyôka ankêto: Jisshi hôkokusho. Kekka to bunseki. 2004-2006 nendo jisshi bun*).
- MEXT (Ministry of Education, Culture, Sports, Science and Technology) (2009). Higher Education Bureau. *Higher education in Japan*.  
[http://www.mext.go.jp/english/koutou/detail/\\_\\_\\_icsFiles/afiedfile/2009/12/03/1287370\\_1\\_1.pdf](http://www.mext.go.jp/english/koutou/detail/___icsFiles/afiedfile/2009/12/03/1287370_1_1.pdf); last accessed on 31 January 2010.
- Trow, M. (1973). Problems in the transition from elite to mass higher education. CA: Carnegie Commission on Higher education. (ERIC Document Reproduction Service No. ED091983). [http://www.eric.ed.gov/ERICWebPortal/Home.portal?\\_nfpb=true&ERICExtSearch\\_SearchValue\\_0=ED091983&searchtype=keyword&ERICExtSearch\\_SearchType\\_0=no&\\_pageLabel=RecordDetails&objectId=0900019b800266d4&accno=ED091983&\\_nfls=false](http://www.eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&ERICExtSearch_SearchValue_0=ED091983&searchtype=keyword&ERICExtSearch_SearchType_0=no&_pageLabel=RecordDetails&objectId=0900019b800266d4&accno=ED091983&_nfls=false) last accessed on 31 January 2010.

(なかむら まさき 大学教育実践センター・准教授)

(もちづき たろう 大学教育実践センター・教授)