FY2016-2017 Research Project of the National Institute for Educational Policy Research
Summary of a Study of Teaching and Learning Environments that Support Students' Growth

1. Purpose and summary of the study

(1) Purpose of the study

The quality of university education is being questioned from the perspective of whether an appropriate teaching and learning environment has been prepared as well as whether the students are able to achieve the learning outcomes. Amid such circumstances, activities that are envisaged to encourage the students to engage in independent learning (active learning, etc.) on the one hand, and measures aiming for visualization of the learning outcomes on the other hand are being proactively promoted, but the relationship between the two is not always clear.

Therefore, this research project intends to elucidate the relationship between the teaching and learning environment and the learning outcomes based on empirical research.

In this study, the aim was to broadly capture the learning outcomes as "student growth", and to clarify from the national survey data and case studies whether the teaching and learning environment has a positive correlation with such indicators as the acquisition of knowledge and skills by the students, grades and increased learning time.

(A) Whether the university's globalization strategy affects the students' growth.

(B) Whether reform of the educational content and methods of universities have had an impact on the students' growth.

(C) Whether diversity in the composition of the student body affects the students' growth.

(D) Whether the size of the student body affects the students' growth.

(2) Summary of the study

The following issues were addressed for each of the topics (A) to (D) above.

(A) Whether the university's globalization strategy affects the students' growth

To provide facts that contribute to policymaking pertaining to globalization by identifying whether the reforms introduced as part of the university's globalization strategy (e.g., double degree with a foreign university, courses taught in a foreign language, flexible academic calendar, etc.) have had any impact on the students' learning behavior or learning outcomes based on a review of a case studies report and interviews.

(B) Whether reform of the educational content and methods of universities have had an impact on the students' growth

To analyze the structure of learning behavior at an individual student level and its determinants by using data collected from a large-scale sample of students' learning behavior as

well as attitudes and stance towards learning, and to analyze whether the implementation of reform of the educational content and teaching methods at the university level as environmental factors of learning have affected the students' learning behavior and learning outcomes.

(C) Whether diversity in the composition of the student body affects the students' growth

To study to what extent it is preferable for the composition of the student body to be diverse in terms of gender and place of origin in relation to the students' growth during their studies in line with the differences in the field of specialty and the location of the university. In particular, to focus on the gender ratio of the student bodies and the proportion of students at regional universities coming from outside the region, and to identify its significance in terms of university education. It would appear that focusing on the latter is also important from the perspective of "regional revitalization."

(D) Whether the size of the student body affects the students' growth

To study how much the size of the student body such as the class size and campus size influences the students' growth during their studies while considering the aspect of the learning environment, including teaching techniques. In view of the interest in new methodologies such as active learning, while bearing in mind the correlation between educational methods and the size of student bodies, to organize knowledge and data that will form the basis for future discussions.

In conducting the research, we proceeded with research for each of the topics, and at the end of each fiscal year, held a general meeting where all of the members could get together for discussions and the presentation of reports. In particular, in terms of gaining an appropriate perspective on recent reform of the educational content and methods of universities, since the university education theory which was adopted at the time of establishment of the new-education-system universities offered many suggestions, a seminar was held at the time of the FY2016 General Conference. In the discussions on postwar education reform and its reexamination, reports were presented and questions raised about what kind of understanding and evaluation could be seen in relation to the university's curriculum, contents and methods.

[Period of the study: FY2016 - FY2017, Research Project Leader: Satoko Fukahori (Visiting Senior Visiting Fellow)]

2. Summary of the research results

(1) Part 1 "Seminar Report"

Part 1 of the report contains a seminar report entitled "The Curriculum Organization Problem of New-Education-System Universities" and records of the ensuing Q&A session. An outline of the report is as follows.

The curriculum of the new-system universities after the war was modeled on the United States and was decided in a very short space of time, but at the time, Japan was lacking in sufficient knowledge about American college education. The greatest feature of the American model was that the curriculum organization was diverse, whereas Japan had no experience of liberalized curriculum organization and therefore, it became uniform and rigid, and only became more flexible at the time of the revision of the Standards for Establishment of Universities in 1991.

The reason for the curriculum being so uniform and rigid was that, at first, the plan had been to introduce a dual system of chartering and accreditation, and the "Standards for Establishment of Universities" and "University Standards" (accreditation criteria) were intended to be operated separately, but as a result of the University Standards being adopted as they were as the Standards for Establishment of Universities, the approval for establishment came to encompass not only the external standards for the facilities and equipment, but also the curriculum organization. The accreditation system failed to start, and chartering became virtually everything.

Criticism and regret over the uniformity arose, and in the process of the Japanese university professors and administrators studying the American college education and higher education systems, it was finally recognized that what was important was where specialized education and professional education were to be taught. In Europe and the old-system of Japan, a complete form of specialized education and professional education was taught at the undergraduate level while in the American system, advanced specialized education and professional education were entrusted to the graduate schools. Therefore, as well as the general curriculum, the graduate school system influenced the curriculum organization of the undergraduate program. At the same time, discussions on reviewing curriculum organization took place among the university professors and administrators, and a lot of discussions were held concerning improvement of the educational content and methods.

Subsequently, there were two possible options to make the curriculum organization more diverse and flexible. One was flexible and adaptable establishment standards, "selective diversification," and the other was classification of higher education institutions, "managed diversification." The latter concept of classification also encompassed the proposal of diversification of curriculum organization associated with the classification, but was the target of vigorous criticism from the universities. As a result, the traditional form of specialized education and professional education was retained, and since there was also little interest in the university curriculum as well as criticism of general education and calls for its reduction, the curriculum reform was delayed.

In response to the 1991 University Council Report entitled "On the Improvement of University Education", the Standards for the Establishment of Universities were overhauled, curriculum organization liberalized, general education reduced, and the proportion of specialized and professional education increased, and moreover, the simultaneous surge in new-name departments was also a form of curriculum reform. There is a need to look back and reexamine

the issues of whether the liberalization resulted in the anticipated diversification, whether undergraduate education became college education, and whether the professional graduate schools have started to develop.

(2) Part 2 "Research Report"

Part 2 contains 14 research papers on the abovementioned topics (A) to (D). Chapters 1 to 4 correspond to Topic (A), Chapters 5 to 9 to Topic (B), Chapters 10 to 12 to Topic (C), and Chapters 13 and 14 to Topic (D). Chapters 5 to 11 use the data from the "Study on the Learning Experiences of University Students" jointly conducted with the "Student Life Survey" of the Japan Student Services Organization in 2014.

In Chapter 1, "How the teaching and learning environment of the universities has changed due to the globalization subsidies project", a summary was compiled of the "Project to Reinforce the Global Expansion of Universities", and a review conducted of the evaluation reports of the adopted projects. As a result, what became clear was the importance of linking the subsidies to the establishment of a framework and organizational structure that forms the basis of student exchange programs, forming a consensus on the outcomes of exchange programs, and promoting the design, implementation, measurement and improvement of programs based on the outcomes. Moreover, an overview is also given of the cases taken up in Chapters 2 to 4.

In Chapter 2, "Case Study 1: Kyushu University Cooperational Graduate Education Program for the Development of Global Human Resources in Energy and Environmental Science and Technology," analyzes the effects of the "Inter-University Exchange Project" based on interviews. Based on this project, a model of a master's double degree program with a high degree of completion was built, and it was revealed that various challenges were being faced in the routine work of the Interdisciplinary Graduate School of Engineering Sciences, such as the development of a doctoral double degree program with a focus on research, ways of obtaining support from the university headquarters and ways of securing running costs. In addition, this led to suggestions to be made respectively to the university, departments, and governments.

In Chapter 3, "Case Study 2: Waseda University Global Leadership Program", it became apparent based on interviews that the "Inter-University Exchange Project" had become a "booster" and had contributed to propelling the globalization of university education at Waseda University. The underlying factors of the effective operation of the project was that the project was consistent with the university's academic vision and strategy, and the program was designed as a curriculum that was linked to course work before and after study abroad, and was positioned as a part of the undergraduate program.

In Chapter 4, "Case Study 3: Chiba University Continents Design Education Program" analyzes the outcomes and challenges of a program adopted by the "Inter-University Exchange Project" based on interviews and other surveys. The underlying factors supporting the project's high appraisal was the efforts of the graduate schools before adoption of the project (such as

sending young professors overseas) as well as the importance of institution-wide reforms (such as reform of the academic calendar), and also the fact that the professors were encouraged to have experience abroad through the project, and great educational effects were seen in terms of expanding the perspectives of the students, and moreover, this was also starting to have a positive impact in terms of the students finding employment.

In Chapter 5, "Empirical Analysis of the Correlation between Financial Aid and Student Life", we analyzed the effect of receiving scholarship loans to male students in the fields of humanities, social sciences and education commuting to a private university (daytime) from home. It became clear using three statistical methods: testing of the mean difference, multiple regression analysis (ordinary least squares), and propensity score matching that scholarship loan recipients spend more time on both preparing and reviewing university classes and on part-time/regular jobs than those who do not.

In Chapter 6, "The Effects of Part-Time Jobs and Club Activities on University Grades", it was revealed based on the results of wide-ranging analysis that the more time students spent on their part-time job, the lower their willingness to study in class and the lower their grades, and this was generally the same when it came to club activities, but there was no correlation between time spent on entertainment as well as time spent on activities with friends and the grades of the students. In addition, it was revealed that the more time students spent on preparation and revision of classes and on studies outside of class the better their grades (however this tendency was only for up to 10 hours per week), and that the more students had experienced group work and other more recent lesson styles, the more hours spent by the student on attending classes and the more hours of learning.

In Chapter 7, "A Consideration on the Learning Experiences of University Students focusing on the Grades and Credit Acquisition", the author examined the relationship between grades and the ratio of acquired credits to credits required for graduation. It was revealed that the more credits earned by the students the higher the grades, but in the case of first-year university students, the grades tended to be lower if the number of credits earned was "too many" (except for national universities). In addition, even first-year students whose "grades were low but had acquired a large number of credits", did not necessarily give themselves a low self-assessment of their achievement relating to specialized knowledge, and this suggests the possibility that there is certain significance in taking a certain number of courses.

In Chapter 8, "The Student Life of Fourth-Year Students" examines the student life of fourth-year students in the late fall (November). After elucidating the differences in student life depending on gender, major, and the desired career course after graduation, the author analyzed the characteristics of the students who were continuing with their job-hunting activities and seeking employment with a private company. It became clear that many of the students who continued to look for work were studying welfare or the arts, and commuted to university from home, and students who had finished their job-hunting activities were more likely to proactively

participate in group work and discussions than those who were still engaging in job-hunting activities, and their self-assessment of their skills to speak in an easy-to-follow manner were also high.

In Chapter 9, "Time Spent on Graduation Research" the time spent by third and fourth-year university students on their graduation thesis and graduation research was examined, and an analysis was conducted of its determinants and the effect on recognition of learning outcomes. It became clear that a certain number of students started to work on their graduation research from their third year, and that what stood out as the determinants of time spent was variables other than affiliation for third-year students and affiliation-related variables for fourth-year students. Moreover, this suggests that the effect of time spent on graduation research towards a recognition of learning outcomes was not that clear, but a positive effect may exist depending on the field.

In Chapter 10, "The Classes and Learning by Gender Ratio of the Learning Environment", the majors of the students were categorized into five types depending on high and low female ratios, and an analysis was conducted of gender differences such as approach to the class. As a whole, female students tended to prepare and review more and proactively participate in class than male students, and in the case of female students, they had an eager approach to classes at universities where there were a large number of students of the same sex.

In Chapter 11, "Diversity in the Place of Origin and Skills Formation of Students," indicators are provided of the "diversity of the student body" by the region of origin (prefecture), and a study was conducted of regional national universities in relation to the skills formation of students through the classes. In the humanities and social sciences fields, there was a tendency for students, who belonged to undergraduate departments where the students came from diverse places of origin, to have a greater recognition of the efficacy of classes where general-purpose skills such as the skills to think critically, find and solve problems, and to hold a broad perspective are formed.

In Chapter 12, "Decentralization Policy of Higher Education and Examination of Differences in Regional Education Opportunities" the author examined the changes in the regional blocks of prospective university students (encompassing all national, public and private universities, and national universities only) from 1974 to 2016 based on the changes in the level and variation of the rate of advancement to university by region. As a trend, the inflows and outflows at the time of entering university in each region has decreased, and in particular, in the provincial areas, there was a rise in the capacity and an increase in regional higher education opportunities, but in the case of national universities, the change in outflows and inflows was revealed to be slight (aside from the fact the inflow decreased in the southern Kanto area).

In Chapter 13, "Trends of Research in Japan Concerning Student Body Size", the research was organized into three areas of research trends: research relating to the number of students per teacher (ST ratio), the relationship between class size and satisfaction in the class evaluation, and the relationship between class size and learning outcomes (general skills and grades). It became

apparent with regard to how the number and size of student bodies affects learning that there was a difference in opinion among researchers except for the negative effect of class size on subjective evaluation such as satisfaction.

In Chapter 14, "Effects of University Size on Learning Activities," we examined the effects of the size of the university on the learning activities of graduate students. An analysis was conducted of the survey data for graduate students, focusing on the laboratory size at the micro level (laboratory student number) and the university size at the institution level (total number of students). It became clear that there was no correlation between the size of the laboratory to the proportion of "meaningful courses", and the size of the university had a negative effect until reaching a certain level, and a positive effect (a U-shaped correlation) after exceeding this level.

(3) Part 3: "FY2016 Study on the Learning Experiences of University Students"

In Part 3, a summary is given of the results of the second "Study on the Learning Experiences of University Students" conducted in 2016 (daytime university). For many question items such as on time spent on learning, the results were similar to those of the last survey that was conducted in 2014. Since the data is reliable as a large-scale sampling survey at the national level and can be compared chronologically, it is expected to be used for various analyses in the future.