

# Improving student learning through integration of successful assessment practices implemented at Japanese universities

## Presenters:

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## Moderator:

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## Outline of Presentation

- Introduction of Japanese higher education
  - Recent trends in higher education reforms
  - Status of assessment practices
  - Findings from two surveys at program- and institutional- levels-
- Assessment Practice Cases
  - Determining program-level learning outcomes
  - Measuring institutional-level learning outcomes

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# Intro①: Grand Design for Higher Education toward 2040

## Grand Design for Higher Education toward 2040 (report) [Summary]

November 26, 2018  
Central Council for Education

### I. Vision for the year 2040 and ideal higher education—Shifting to learners-oriented education—

Social changes around 2040  
UN SDGs "A society where all people can enjoy peace and prosperity": Society 5.0 and Feasible education, the 100-year life society, globalization, regional revitalization

**Needed human resources and desired higher education**

People capable of surviving the age of unpredictability

- Acquire universal knowledge and understanding as well as versatile skills both in humanities and sciences
- Quality to actively support society along with the changes of the times and improve the society with capability of thinking logically
- Visualize the learning outcomes of individual learners, i.e. "what they have learned and acquired"
- Breakaway from the educational approach whereby systems are established only by centering individual teachers' educational methods and research
- Ensure diversity and flexibility in systems to enable learners to continue learning as well as mobility of learners

Shift to learners-oriented education

**Relationship between higher education and society**

Common base of knowledge

Strengthening research capabilities

Cooperation and collaboration with industry

Contribution to communities

- Develop new social and economic systems through education and research and provide its achievements to society
- Contribution to creating innovation and development of science and technology by using diverse and advanced "knowledge"
- Matching between employment and work style reforms and learning opportunities provided by higher education
- Contribution to creating a "society with a living conditions where individual values will be respected"

### II. Education and research systems—Ensuring diversity and flexibility—

**Diverse students**

- Shifting from the conventional model that assumes Japanese students entering higher education at the age of 18 to be the main targets, to the new model that actively accepting adult students and international students
- Recurrent education, promotion of international exchange of students, international expansion of higher education

**Diverse teachers**

- Developing a scheme for recruiting a diverse range of teachers (i.e. diversity in age, gender, and nationalities, and teachers with practitioner backgrounds)
- Development of schemes and environments (e.g. training programs and performance evaluation) that allow teachers to carry out diverse educational and research activities consistently

**Diverse and flexible educational programs**

- Education designed to broaden the range of learning both in humanities and sciences, and timely and flexible development of educational programs
- Development of university systems focusing on degree programs, sharing of resources among universities, and promotion of use of ICTs

**Flexible governance to accept diversity**

- Developing a scheme for enhancing management functions and ability of individual universities and facilitating cooperation and integration among universities
- Establishing a system for allowing a single corporation to operate multiple national universities, strengthening of guidance to help individual universities in management improvement and enable them to create early business operations (including the operation to follow-up discussions as a part of cooperation for creating opportunities between universities and local governments which enables universities to cooperate with universities' respective private 100 corporations of national industry)

**Enhancement of diverse strengths of universities**

- Clarification and further development of strengths and features of individual institutions from the perspective of human resources development

### III. Quality Assurance and Information Disclosure—Restructuring of the quality assurance for "learning outcomes"—

**Developing education management system**

- Development of guidelines for initiatives that are conducive to improvement and reforms of education at individual universities

**Visualization of learning outcomes and promotion of information disclosure**

- Student information regarding their status of acquisition of credits and degrees, perception of growth and satisfaction
- Obligation to disclose information regarding student information, educational results, and the quality of education
- Collecting comparable data through nationwide surveys on students and universities

**Review of the standards for establishment of universities**

(Fundamental review of admission quota management, educational methods, and facilities and equipment, in light of the changes of era as well as the advancement of information technology and education and research)

**Improvement of the certified evaluation and accreditation system**

(Strict response to legal violations)

Restructuring of the quality assurance system

### IV. Sizes and locations of higher education institutions in light of the decline of the 18-year-old population—To maintain the "Basis of knowledge" for all generations—

The sizes of institutions necessary to accept the students entering higher education

- Establishment of campuses that will accept values of diverse students, including adult students and international students, in view of the future changes in society
- Deciding the proper sizes of institutions to achieve educational reforms aimed at developing students' possibilities, and strict assessments made on those that fail to assure quality of education

(Reference) Estimates for 2040

- 18-year-old population: 1,200,000 persons (2017)
- 830,000 persons (74% of the current level)
- Number of students advancing to university: 630,000 persons (2017) → 510,000 persons (86% of the current level)

Maintenance of Higher education on a regional level

- Creation of the "Platform for Regional Cooperation" (tentative name) for multiple higher education institutions, local governments and industries in each region to discuss the future visions for the region and specific measures for cooperation and interaction

Roles of national, public and private institutions

- Concerted efforts among national, public and private institutions to restructure and develop higher education in each region while taking into consideration their respective historic backgrounds and re-organized roles
- Study of the roles of national universities and the direction concerning the necessary fields and scales of their activity

### V. Roles of individual higher education institutions—Diverse education provided by diverse institutions—

- Further discussion on specific issues of each type of school (university, professional college/ professional junior college, junior college, college of technology, professional training school, and graduate school)
- Increase of mobility of students through enhanced partnerships among higher education institutions (by admitting transfer) to provide more diversified carrier paths

### VI. Investment in higher education—Visualization of costs and expansion of assistance from all sectors in society—

- Necessity to increase public assistance for the higher education to maintain the national capability
- Assistance from the private sector in the form of investment and donations with a view to ensuring that all sectors in society can enjoy economic benefits and other benefits of higher education (diversification of financial resources)
- Visualization of educational and research costs
- Demonstrating to society the social and economic benefits of higher education as a whole
- Promotion of public understanding of the burden of cost on society, including public assistance
- Fostering the momentum to invite necessary investment to higher education

Source: Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan  
[https://www.mext.go.jp/component/b\\_menu/shingi/toushin/\\_icsFiles/afieldfile/2018/12/17/1411360\\_7\\_2.pdf](https://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2018/12/17/1411360_7_2.pdf)

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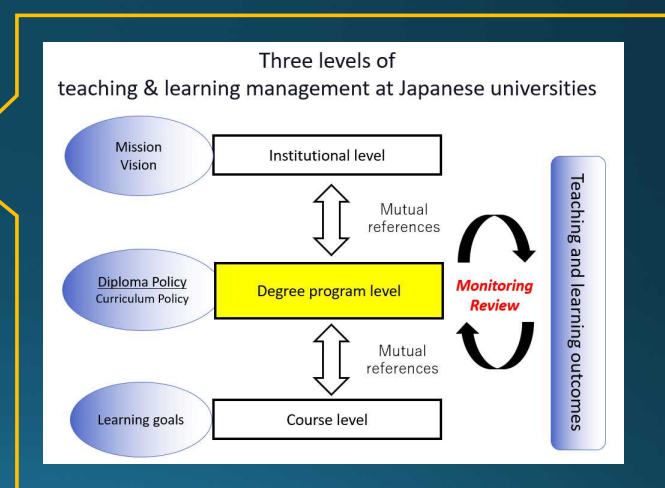
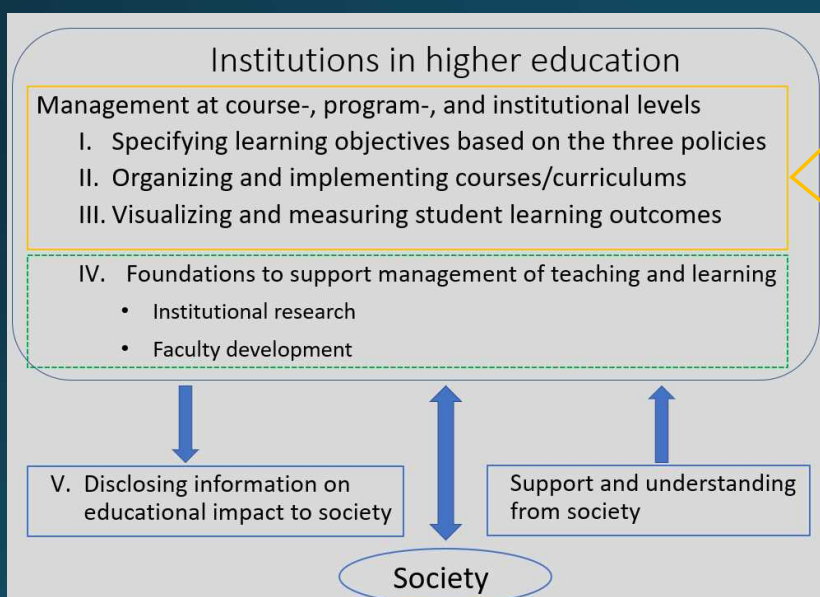
## Intro③: Internal Quality Assurance in the Grand Design

- Focus on **visualization and assessment of student learning outcomes to achieve learner-centered education**
- Strengthening quality assurance based on the three policies below:
  - Admission Policy (AP): the student selection guidelines for admissions
  - Curriculum Policy (CP): the educational content and methods of a degree program
  - **Diploma Policy (DP): the learning outcomes of a degree program**
- Each institution in higher education **must establish the three policies, and manage teaching and learning based on them**
- DP learning outcomes must be clarified and courses need to be designed around them ⇒ **Students will achieve the specified DP outcomes when they complete a degree program**

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## Intro④: Guidelines for Management of Teaching and Learning

- Released in 2020 by the Central Council for Education's Subcommittee on Universities
- To **achieve learners-centered education** described in the Grand Design

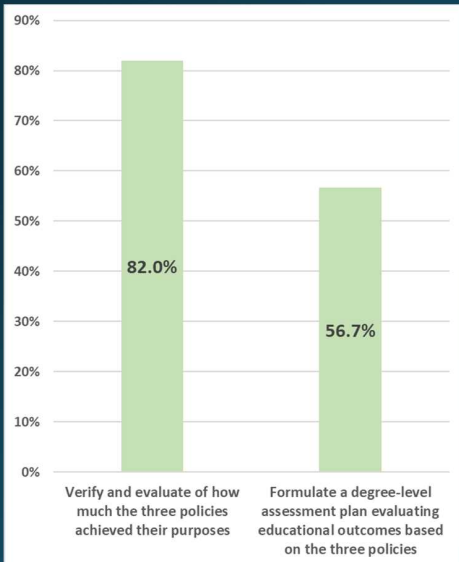


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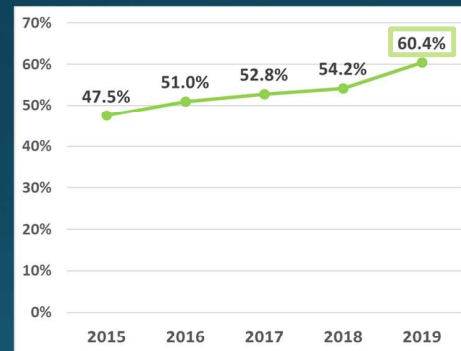
# Nationwide survey on institutional-level assessment practices

- Implemented annually by MEXT to gauge the status and progress of educational reforms conducted by each university
- Below are latest survey results regarding institutional-level efforts to assess student learning outcomes, as of 2019
- 763 universities answered the survey with a response rate of approximately 97%

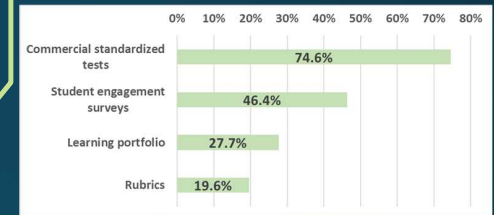
Evaluating education based on the three policies in 2019



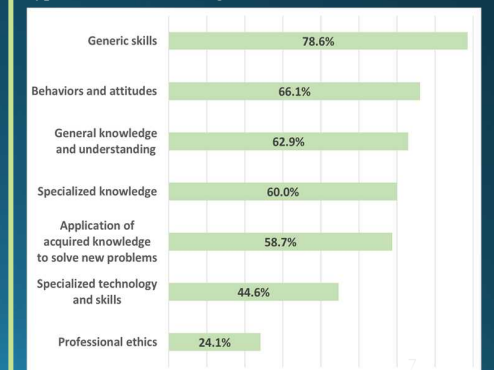
Percentage of universities that assess student learning outcomes through its degree programs



Assessment methods



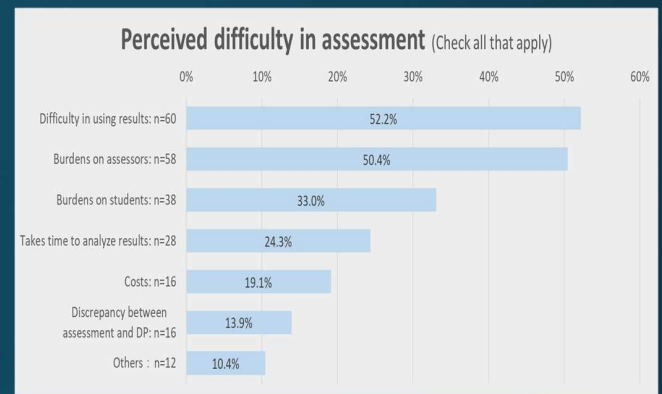
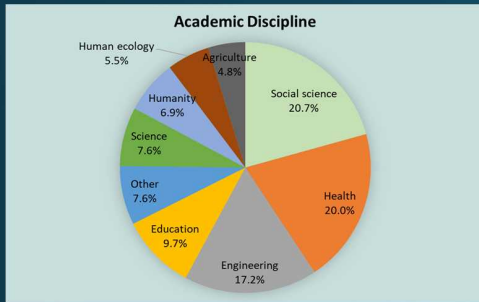
Types of student learning outcomes



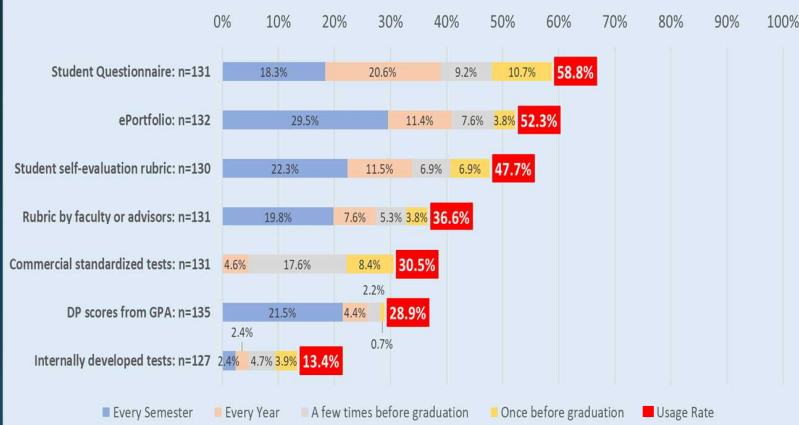
## Study to examine program-level assessment (Ozeki et al, 2021)

- To reveal program-level assessment practices at Japanese universities
  - Methods to assess the DP learning outcomes
  - Perceived challenges in assessment
  - Strategies to inform students of target outcomes
- Method
  - A sample was drawn from 72 Japanese universities, with a nationally funded educational project to develop higher education
  - We asked a program-level administrator, such as the department chair, to respond
  - Data collected from 145 individual degree program

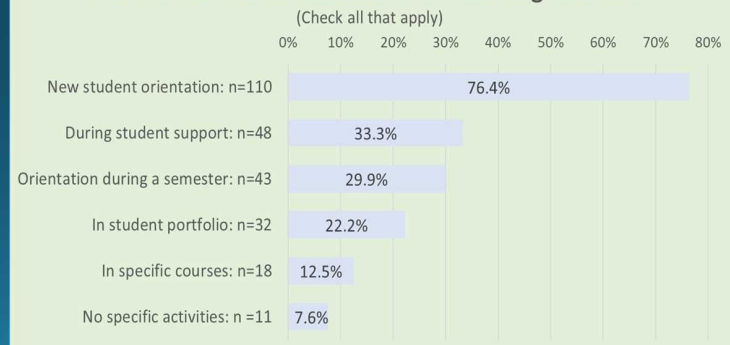
# Snapshot of Results



## Methods to assess DP learning outcomes



## Methods to inform students of DP learning outcomes (Check all that apply)



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# Summary

- Important theme: **Ensuring DP learning outcomes**
- Challenges and ongoing efforts
  - Defining DP learning outcomes clearly
  - Facilitating students' understandings of those outcomes
  - Accurately assessing them
  - Organizing curriculums and offering courses to attain them
  - Improving education based on assessment results

# Case Study : Institutional-level Assessment

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## Case Study : Institutional-level Assessment

- Most Japanese universities define an assessment plan based on three levels of higher education as below.

<b>Category Layer</b>	<b>Educational Unit</b>	<b>Learning Goals</b>	<b>Assessment Methods</b>
<b>Macro Level</b>	<b>Institution (University-wide)</b>	<b>Vision, Mission, Value, Essential Knowledge and Generic Skills</b>	<b>Student Engagement Survey, Institutional Rubrics</b>
<b>Middle Level</b>	<b>Degree Program</b>	<b>Diploma Policy</b>	<b>Program Rubrics, Portfolio</b>
<b>Micro Level</b>	<b>Course</b>	<b>Course Objectives</b>	<b>Course Evaluation</b>

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# Case Study : Institutional-level Assessment

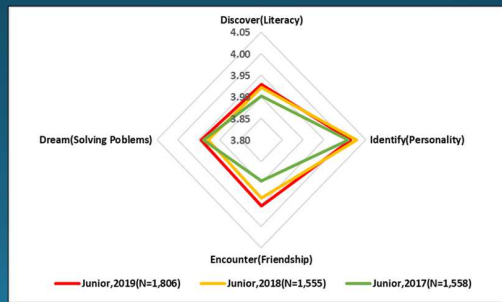
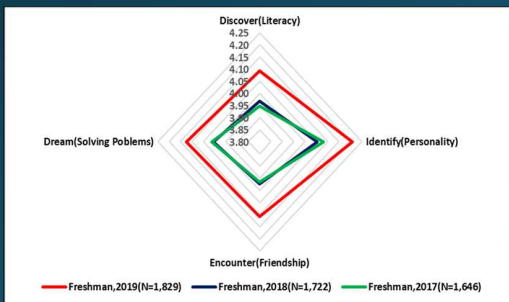
Yamaguchi University, a national university, has developed a quality assurance system to visualize the achievements of essential knowledge and generic skills in 2019.

The following 4 generic skills, set as institutional-level learning goals of Yamaguchi university, are assessed by a student engagement survey and visualized in the system.

1. Discover (Literacy): discovering new topics and issues to solve
2. Identify (Personality): developing a rich sense of humanity
3. Encounter (Friendship): meeting and interacting with people
4. Dream (Solving problems): overcoming difficulties to achieve one's dream

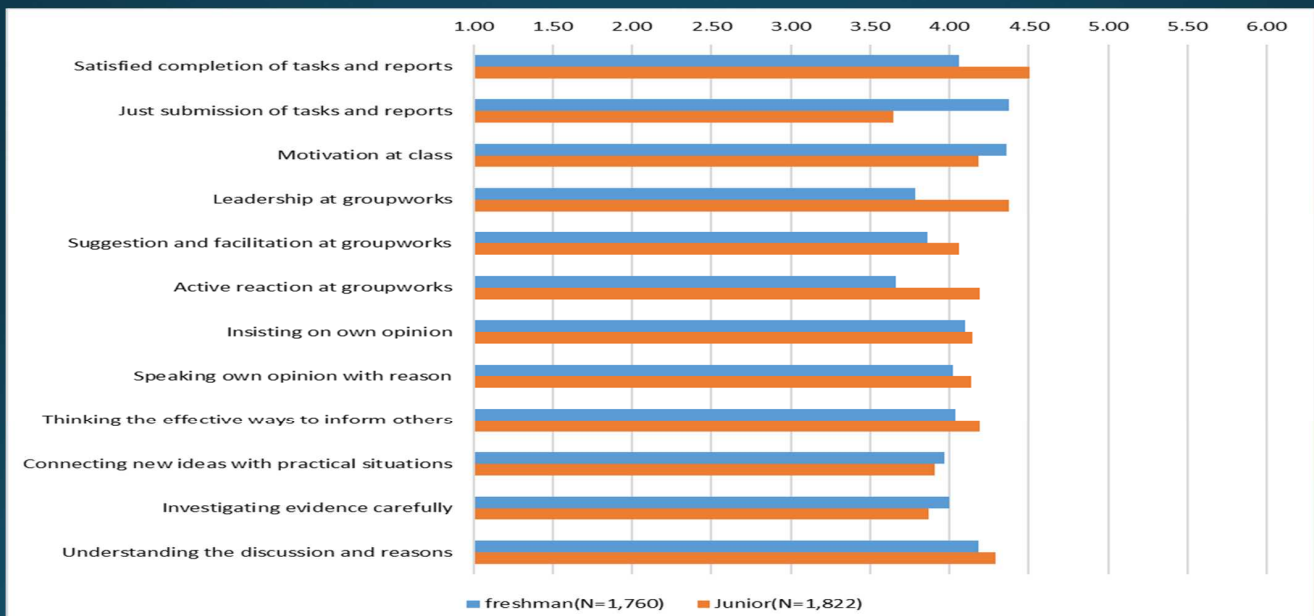


Results from the student engagement survey are reflected in the system with a radar chart. Each student reflects on his or her own skills and recognizes the importance of self-regulated learning referring individual data at the class for assessment.



# Case Study : Institutional-level Assessment

We could grasp the changes of learning behaviors at student engagement survey from freshman to junior in 2019. In particular, the percentage of "Satisfied completion of tasks and reports", "Leadership of groupworks", "Understanding the discussion and reasons" has increased. (There is a significance difference at some faculties.)



# Case Study : Program-level Assessment

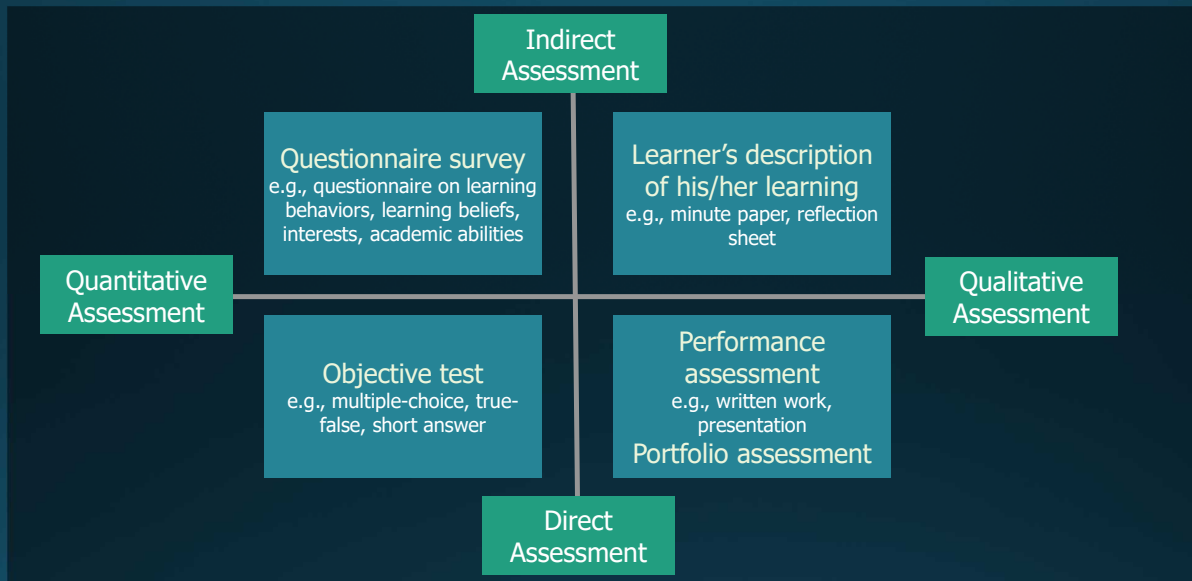
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## Diversity of learning outcomes assessments

- The variety of learning outcomes assessments has been increasing in recent years (Matsushita, 2017).
- They can be classified into
  - (1) direct and indirect assessment,
  - (2) qualitative and quantitative assessment
  - (3) assessment at the course/program/institution level



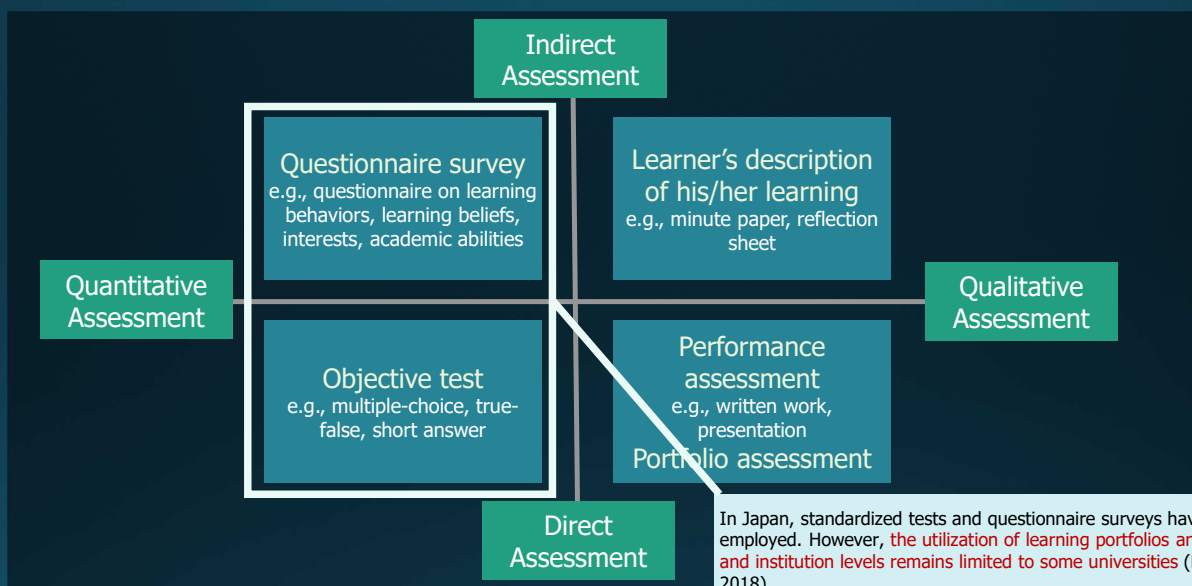
# Four Types of Learning Outcomes Assessment



Matsushita, Kayo. "Making Learning Outcomes Visible." *Japanese Journal of Higher Education Research* 20 (2017): 94-96 [in Japanese].

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# Four Types of Learning Outcomes Assessment



In Japan, standardized tests and questionnaire surveys have been increasingly employed. However, the utilization of learning portfolios and rubrics at program and institution levels remains limited to some universities (Matsushita et al., 2018).

Matsushita, Kayo, Kazuhiro Ono, and Yugo Saito. "Combining course-and program-level outcomes assessments through embedded performance assessments at key courses: A proposal based on the experience from a Japanese dental education program." *Tuning Journal for Higher Education* 6.1 (2018): 111-142.

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# Comparison of Program-Level Assessments

(Matsushita et al., 2018, Table 5, p.134)

Program-level assessment	Validity	Feasibility	Compatibility with a credit system
Questionnaire survey (indirect, quantitative)	Substitute of direct assessment is problematic.	High	Low
Objective test as add-on assessment (direct, quantitative)	Suitable for assessing factual knowledge, but not necessarily for integration of knowledge and higher-order skills.	High	Not high (Sometimes the test results don't match with the expected results based on the acquired credits.)

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# Comparison of Program Level-Assessments

(Matsushita et al., 2018, Table 5, p.134)

Program-level assessment	Validity	Feasibility	Compatibility with a credit system
Portfolio assessment (direct, qualitative)	Suitable for assessing learning and growth within a selected time period.	Medium or low (It requires second scoring. Assessment burden depends on the volume of assessment objects and the methods of second scoring.)	Not high (Sometimes the results of second scoring don't match with the expected results based on the acquired credits.)
Performance assessment at key courses (direct, qualitative)	Suitable for assessing knowledge integration and higher-order skills, but it cannot cover the whole program.	Relatively high (Second scoring is not required. Although assessment burden at each key course is high, the number of courses is limited.)	High (The assessment result of each course can be directly used in a credit system)

Matsushita, Kayo, Kazuhiro Ono, and Yugo Saito. "Combining course-and program-level outcomes assessments through embedded performance assessments at key courses: A proposal based on the experience from a Japanese dental education program." *Tuning Journal for Higher Education* 6.1 (2018): 111-142.

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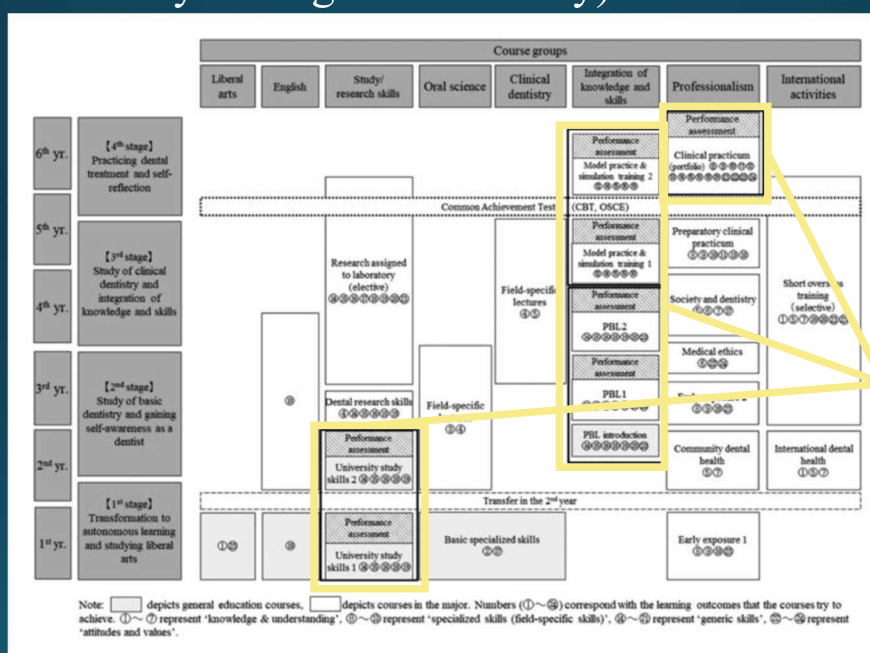
# Case of Performance Assessment at Key Courses

- Matsushita et al. (2018) proposed PEPA (Pivotal Embedded Performance Assessment)
  - This proposal based on the experience from a Japanese dental education program.
    - They have developed several performance assessments at the course level, such as Modified Triple Jump for the PBL course.
  - The method is performance assessment at key courses only by a faculty team with other courses left to the expert judgment of individual teachers.
  - The faculty members connect assessments at the course and program levels while covering the whole curriculum.

Matsushita, Kayo, Kazuhiro Ono, and Yugo Saito. "Combining course-and program-level outcomes assessments through embedded performance assessments at key courses: A proposal based on the experience from a Japanese dental education program." *Tuning Journal for Higher Education* 6.1 (2018): 111-142.

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## Outline of the Curriculum and Assessment (the Faculty of Dentistry at Niigata University)



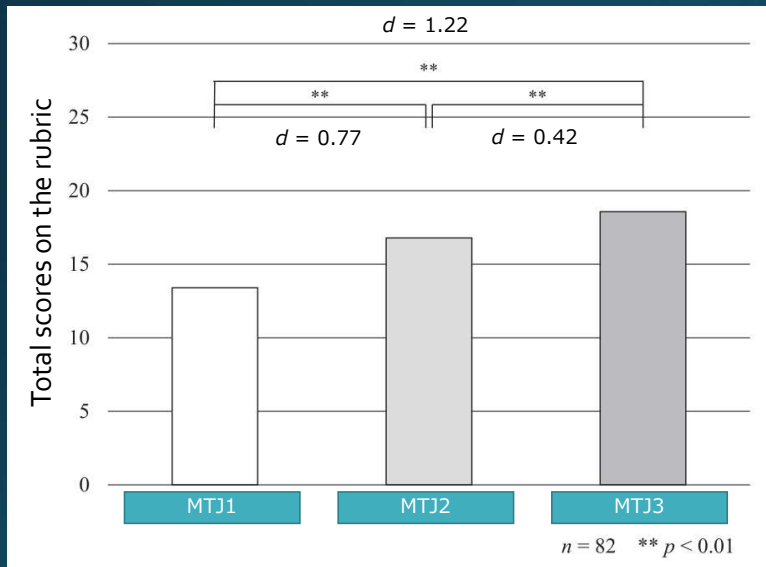
Performance Assessment at Key Courses

(Matsushita et al., 2018, Figure 4, p.125)

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Direct assessment of problem-solving ability

- Modified Triple Jump (MTJ) and Rubric
- an assessment tool for this PBL program

Visualization of learning outcomes and students' growth tied to DPs

(Ono et al., 2020, Figure 4, p.6)

Kazuhiro Ono, Yugo Saito, and Matsushita, Kayo. "Direct Assessment of Long-Term Learning Outcomes in the PBL Curriculum: Based on a Longitudinal Study of Performance Assessment at the Niigata University's Faculty of Dentistry" *Kyoto University researches in higher education* 26 (2020): 1-12. [In Japanese.]

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## Thank you for listening

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5. Kayo Matsushita, "Making Learning Outcomes Visible," *Japanese Journal of Higher Education Research* 20 (2017): 94-96 [in Japanese].
6. Matsushita, Kayo, Kazuhiro Ono, and Yugo Saito. "Combining course-and program-level outcomes assessments through embedded performance assessments at key courses: A proposal based on the experience from a Japanese dental education program." *Tuning Journal for Higher Education* 6.1 (2018): 111-142.
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