University reform in Japan – towards the Knowledge Society

Jun Oba
Research Institute for Higher Education
Hiroshima University, Japan
oba@hiroshima-u.ac.jp
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I  Introduction – Japanese education system
II  Advent of the knowledge society
III  Reform in university education
IV  Closing remarks
I Japanese education system

1. School education

• Pre-school education
  – kindergarten

• Elementary education (compulsory)
  – elementary school

• Secondary school (lower level : compulsory)
  – lower-secondary school
  – upper-secondary school
  – secondary education school
• Higher education
  – university
  – junior college

• Upper secondary + higher education
  – college of technology
  – special training schools
Organisation of the present school system

- **Pre-school education**
  - Kindergarten

- **Primary education**
  - Elementary school
  - Lower secondary school
  - Upper secondary school
  - Secondary education school

- **Secondary education**
  - Junior college
  - College of Technology
  - College of Advanced courses

- **Higher education**
  - University (faculty)
  - Master
  - Doctor

- **Normal age and school year**
  - Kindergarten: 3
  - Elementary school: 1-6
  - Lower secondary school: 7-9
  - Upper secondary school: 10-12
  - Secondary education school: 12-16
  - University (graduate school): 16-26

- **Special training school**
**Number of schools, students and teachers as of 1\textsuperscript{st} May 2004**

<table>
<thead>
<tr>
<th></th>
<th>Number of schools (private)</th>
<th>Number of students (private)</th>
<th>Number of teachers* (private)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>14,061 (8,363)</td>
<td>1,753,396 (1,390,001)</td>
<td>109,853 (83,789)</td>
</tr>
<tr>
<td>Elementary school</td>
<td>23,420 (187)</td>
<td>7,200,929 (69,300)</td>
<td>414,887 (3,480)</td>
</tr>
<tr>
<td>Lower secondary school</td>
<td>11,102 (709)</td>
<td>3,663,512 (236,006)</td>
<td>249,801 (12,840)</td>
</tr>
<tr>
<td>Upper secondary school</td>
<td>5,429 (1,329)</td>
<td>3,719,048 (569,454)</td>
<td>255,629 (60,107)</td>
</tr>
<tr>
<td>Secondary education school</td>
<td>18 (9)</td>
<td>6,051 (3,355)</td>
<td>470 (247)</td>
</tr>
<tr>
<td>Special education schools (for handicapped children)</td>
<td>999 (12)</td>
<td>98,796 (815)</td>
<td>62,255 (259)</td>
</tr>
</tbody>
</table>

* full-time only
<table>
<thead>
<tr>
<th></th>
<th><strong>Number of schools</strong> (private)</th>
<th><strong>Number of students</strong> (private)</th>
<th><strong>Number of teachers</strong>* (private)</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of technology</td>
<td>63 (3)</td>
<td>58,681 (2,296)</td>
<td>4,474 (158)</td>
</tr>
<tr>
<td>Junior college</td>
<td>508 (451)</td>
<td>233,749 (214,264)</td>
<td>12,740 (11,082)</td>
</tr>
<tr>
<td>University</td>
<td>709 (542)</td>
<td>2,809,323 (2,062,065)</td>
<td>158,756 (86,683)</td>
</tr>
<tr>
<td>Special training school</td>
<td>3,443 (3,228)</td>
<td>791,540 (761,735)</td>
<td>40,675 (37,902)</td>
</tr>
</tbody>
</table>

* full-time only
Cost of education

- **Free compulsory education**
  - very few private institutions

- **Upper secondary education**
  - cheap public education
  - expensive private education

- **Higher education**
  - 3/4 students enrolled in private institutions
  - expensive (public institutions as well to less degree)
Curriculum of primary and secondary education

- Curriculum determined by the Government
- Textbooks edited based on the national curriculum, then authorised by the Government
2. Higher education

- Imperial universities
  - University of Tokyo (later Imperial University, then Tokyo Imperial University) in 1887
  - Other imperial universities in major cities
  - Based on the German model

- Other types of institutions of higher learning (public and private)
• Integration of the German model and the Japanese system
  – faculties of engineering and agriculture, generally classed in a polytechnic system in Europe
• cf. In the 1990s in the world
  – integration of polytechnics into university system (UK, Australia, etc.)
After the war (as of 1949)

- 70 national universities without difference in legal status among them
- 17 local public universities
- 81 private universities
- Junior colleges (regarded as provisional)
University education after war

- Introduction of the American model
- Two layers of undergraduate education
  - general education
  - two-year specialised education
- School of liberal arts

- Improve the quality of education and research with the purpose of nurturing the ability to investigate issues;
- Secure university autonomy by making the educational and research system structure more flexible;
- Establish university administration and management with responsible decision-making and implementation; and
- Individualise universities and continuously improve their education and research by establishing multiple evaluation systems.
Trends in 18-year-old population and access to higher education

![Graph showing trends in 18-year-olds, entrants to universities and junior colleges, and ratio of age group advancing to universities and junior colleges from 1955 to 2009.](image-url)
Total population and percentage of elderly population (over 65)
II Advent of the knowledge society

What is a knowledge society?

- Knowledge: primary resource for economic activities
- Highly professionalised and structured knowledge
- Structural economic and social change, including education
Who are major actors?

- Structural change brought by information and communication technology
- Professionals
- Lifelong learning
  - continual renewing of knowledge
Era of the "knowledge society"

- Entering the era of the "knowledge society" in the 1990s (OECD)
- "Life-long learning for all" at an OECD education ministers' meeting in 1996

 cf. OECD : Organisation for Economic Co-operation and Development
- Changes in the demand for human resources
- New vocational courses
Japan's foreign production ratio by industry
Number of employees by occupational classification
Number of cases of co-operative research implemented between national universities and the industry / Number of the TLO recognised by the Government
• Knowledge = key to development
• Increase in the role of universities
  – production of knowledge
  – transmission of knowledge
  – application of knowledge
Basic functions of universities

- Research
- Teaching
- Collaboration

→ Production
→ Transmission
→ Application
Lifelong learning at the centre of education

- Lifelong learning as an important element in the knowledge society
- Reorganisation of the educational system (National Council on Educational Reform)
  - from a system centred on schools
  - to a system based on lifelong learning
- Increasing demands by adults for higher education
Deregulation in primary and secondary school education

- Shift of the centre of education
  - from a system centred on acquiring knowledge
  - to a system centred on developing multiple abilities
- Elective class (options)
- General learning class
- Development of teachers
III  Reform in university education

1. Curriculum reform in universities

- Towards the universal phase (M. Trow)
  - Over 50% in 1987 (non-university sector included)
- Establishment of the University Council in 1987
• Abolition of subject areas
  – to structure curricula reflecting their own educational ideals and objectives
  – no definition of subject areas, such as general education and specialised education
  – no requirement on obtaining a certain number of credits in each subject area (acquisition of a minimum total number of credits only)
Number of universities that implemented curriculum reform

1996: 91 Private, 36 Public, 348 National
2000: 95 Private, 39 Public, 374 National
2001: 95 Private, 39 Public, 375 National
2002: 87 Private, 52 Public, 412 National
Implementation of curriculum reform in universities (2001)

- Review of subject classification: 475
- Wedge-formed curriculum: 329
- Review of compulsory and elective subjects system: 365
- Review of credits calculation: 321
- Introduction of course system: 204
- Review of the number of credits required for graduation: 353
Established subjects concerning general education (2002)

- Interdisciplinary and general content: 520
- Experiments and practice: 325
- Internships: 152
- Basic subjects in specialised education: 558
- Subjects for students in their third or fourth year: 558
- Practice in drawing up documents, etc.: 444
- Cultivating information utilisation ability: 610
- Subjects concerning mental and physical health: 589
- Major social and academic topics, etc.: 541
Implementation of internship

<table>
<thead>
<tr>
<th>Year</th>
<th>Universities</th>
<th>Junior colleges</th>
<th>Colleges of technology</th>
<th>University implementation rate</th>
<th>Junior college implementation rate</th>
<th>College of technology implementation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>104</td>
<td>36</td>
<td>31</td>
<td>17.7%</td>
<td>6.4%</td>
<td>50.0%</td>
</tr>
<tr>
<td>1997</td>
<td>107</td>
<td>39</td>
<td>35</td>
<td>18.3%</td>
<td>7.0%</td>
<td>56.5%</td>
</tr>
<tr>
<td>1998</td>
<td>143</td>
<td>57</td>
<td>39</td>
<td>23.7%</td>
<td>10.3%</td>
<td>62.9%</td>
</tr>
<tr>
<td>1999</td>
<td>186</td>
<td>81</td>
<td>48</td>
<td>29.9%</td>
<td>14.7%</td>
<td>77.4%</td>
</tr>
<tr>
<td>2000</td>
<td>218</td>
<td>108</td>
<td>52</td>
<td>33.5%</td>
<td>21.1%</td>
<td>83.9%</td>
</tr>
<tr>
<td>2001</td>
<td>281</td>
<td>127</td>
<td>54</td>
<td>41.9%</td>
<td>23.4%</td>
<td>87.1%</td>
</tr>
<tr>
<td>2002</td>
<td>317</td>
<td>117</td>
<td>57</td>
<td>46.3%</td>
<td>23.9%</td>
<td>90.5%</td>
</tr>
</tbody>
</table>
Others

- Entrepreneurial development classes
- Volunteer activities
- Remedial classes
- Double majors
- Joint degree programmes
2. Faculty development (FD)

- Development of teaching abilities
- Improvement of teaching methods
Number of universities that have implemented faculty development
3. Measures compatible with internationalisation and informatisation

- Improvement of foreign language education
  - class division according to goals
  - class division according to students' level
  - employment of native speakers
  - utilisation of qualification tests
Number of universities that open classes taught in foreign language
• Vis-à-vis informatisation
  – compulsory informatics class
  – rooms reserved for informatics
  – multimedia learning/teaching materials
  – establishment of multimedia centres
4. Other measures to improve education

- GPA (grade point average) system
- Semester system
- Syllabus
- Evaluation of classes by students
- Teaching assistant
- Support for career development
Number of universities that have introduced the GPA system

- 2000: 67 (Undergraduate), 6 (Graduate)
- 2001: 88 (Undergraduate), 22 (Graduate)
- 2002: 146 (Undergraduate), 26 (Graduate)
Number of universities that have adopted the semester system
5. Measures taken for adults

- Demand of adults for advanced and sophisticated techniques and abilities
- Lifelong learning
- Re-education of adults to secure high quality human resources
- Increasing expectations as to the roles played by higher education institutions, particularly universities
Measures to facilitate the access to universities for adults

- Evening, day/evening programmes
- Special selection of working adults
- Correspondence with undergraduate and graduate schools
- Special student system
- Professional schools at graduate level
- One year master's degree programme, prolonged study courses
- Satellite classrooms
Number of adult students in universities

- Undergraduate*:
  - 1966: 4509
  - 2000: 4712
  - 2001: 4224
  - 2002: 3922
  - 2003: 3459

- Graduate schools:
  - 1966: 5317
  - 2000: 9406
  - 2001: 10287
  - 2002: 10973
  - 2003: 11080
5. Expansion of graduate schools

- Enhancement of graduate education
- Approximately 80% of universities have graduate schools.
- Teachers' moving to graduate schools
Trends in the Number of Universities to Have Established a Graduate School

(Number of universities)

Trends in the Number of Graduate School Students

(Number of students)

- Universities in which a master’s course has been established
- Universities in which a doctorate course has been established
- Universities in which no graduate school has been established
• Professional schools
  – law schools
  – business schools  etc.
• One-year master's courses
• Non-traditional doctorate courses
Number of doctorate degrees conferred

(Number of degrees)

- Arts
- Sciences
- Others

<table>
<thead>
<tr>
<th>Year</th>
<th>Arts</th>
<th>Sciences</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>134</td>
<td>188</td>
<td>167</td>
</tr>
<tr>
<td>1992</td>
<td>188</td>
<td>145</td>
<td>203</td>
</tr>
<tr>
<td>1993</td>
<td>203</td>
<td>5,309</td>
<td>206</td>
</tr>
<tr>
<td>1994</td>
<td>206</td>
<td>5,668</td>
<td>255</td>
</tr>
<tr>
<td>1995</td>
<td>255</td>
<td>6,307</td>
<td>316</td>
</tr>
<tr>
<td>1996</td>
<td>316</td>
<td>6,954</td>
<td>375</td>
</tr>
<tr>
<td>1997</td>
<td>375</td>
<td>7,579</td>
<td>483</td>
</tr>
<tr>
<td>1998</td>
<td>483</td>
<td>8,251</td>
<td>481</td>
</tr>
<tr>
<td>1999</td>
<td>481</td>
<td>8,388</td>
<td>628</td>
</tr>
<tr>
<td>2000</td>
<td>628</td>
<td>8,789</td>
<td>555</td>
</tr>
<tr>
<td>2001</td>
<td>728</td>
<td>9,110</td>
<td>795</td>
</tr>
</tbody>
</table>
6. Quality assurance

- Deregulation in university education
- Ex-ante regulations to ex-post-facto checks
- Central Council for Education “Building a New System to Secure the Quality of Universities” (2002)
  - Increase in flexibility for the approval system for establishing new departments
  - Third-party evaluation of the state of education and research activities
2002 revision of the School Education Law

- More flexibility for a reorganisation of faculties and departments
- Introduction of a continual third-party accreditation system
MEXT's QA system
For your information
1. Internationalisation of higher education

- Nakasone Plan in 1987
  - More than 100,000 international students in Japan before 21st century
Number of international students in Japanese higher education institutions

![Graph showing number of international students from 1978 to 2004, with a peak in 2000 and a steady increase thereafter.](image-url)
Breakdown of the international students by their region of origin (2004)
• Revision of the legislation concerning the foreign universities in Japan
  – entitlement for graduates to apply for Japanese universities' graduate schools
  – credit transfer
2. University financing – increasing competition between public and private sectors

a. The spiral of tuition fees

- Governmental funds to HE institutions in the FY2003
  - 97 national institutions and others: \(1,525,606\) million yen
  - 989 private universities and junior colleges: \(321,750\) million yen
The first year tuition fees (entrance fees included) by sector and the ratio of tuition fees of private universities to those of national universities
b. Poor public expenditure on higher education

- Pressure towards the reduction of public expenditure on HE
  - decrease in subsidies to private universities
  - increase in tuition fees of national universities
Public expenditure on higher education (2000) in OECD countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Total Public Expenditure (%)</th>
<th>As a Percentage of GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>3.6</td>
<td></td>
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<tr>
<td>Hungary</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>3.3</td>
<td></td>
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<tr>
<td>Italy</td>
<td>1.8</td>
<td></td>
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<tr>
<td>Japan</td>
<td>1.6</td>
<td></td>
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<tr>
<td>Korea</td>
<td>2.7</td>
<td></td>
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<tr>
<td>Mexico</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>NL</td>
<td>2.9</td>
<td></td>
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<tr>
<td>Norway</td>
<td>1.3</td>
<td></td>
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<tr>
<td>Poland</td>
<td>1.4</td>
<td></td>
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<tr>
<td>Portugal</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>OECD Total</td>
<td>3.5</td>
<td></td>
</tr>
</tbody>
</table>
Increase in competitive funds open to public and private institutions

- Competitive funds open indifferently to public and private institutions
  - The 21st Century COE Programme

  cf. COE: centre of excellence
Number of COE projects adopted by the MEXT, by sector
Top 15 universities ranked by the amount of competitive research funds awarded by the Government (million yen)
3. Incorporation of national universities in 2004

- Change in the status of the governmental institutions
- Legal personality and more autonomy
- Non-public servant status for staff
- Participation of external people in university administration
4. Labour market for students

- Difficult situation for students
- Early recruitment activities
Factors regarded as most important by employers for recruitment

Factors contributing to employment as percentage

- Communication ability: 12.8%
- Basic scholastic ability: 11.8%
- Power of action/ability to act: 10.8%
- Specialised knowledge: 8.4%
- Business manner: 7.0%
- Professionalism/attitude toward work: 6.7%
- Flexibility/adaptability to environment: 6.5%
- Positiveness/extroversion: 6.3%
- Other factors: 6.3%
- Aspiration/inquiring mind: 4.7%
- Problem-finding ability: 3.7%
- Professionalism/attitude toward work: 3.6%
- Flexibility/adaptability to environment: 3.5%
- Other factors: 7.9%

Remaining factors (from left to right):
- Ability of presentation
- Aspiration/inquiring mind
- Problem-finding ability
- Professionalism/attitude toward work
- Flexibility/adaptability to environment
- Other factors
Closing remarks

- 21\textsuperscript{st} century: knowledge society
  - Professionalisation
  - Lifelong learning
- Increase in demand for university education
• Improvement of teaching methods (including FD)
• Development of graduate schools
• Quality assurance system
• Career development programme (CDP)