Development of Education Reform in Japan: Need for Transversal Skills

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1. **Background: The Second Basic Plan for the Promotion of Education (2013)**

**Creativity**

- Creation of new values

**Self-reliance**

- Development of social competency for survival
- Development of human resources for brighter future
- Establishment of learning safety net with diverse abilities
- Establishment of vibrant communities

**Collaboration**

- Need for new approaches to development and education
- Further mobilization of people, energy, information, etc.
- More international cooperation with emerging nations
- Limited energy supply
- Repeated natural disasters
- Less in-service training within companies

**Changing society and community**

- Less bonding within the local communities

**Global challenging issues**

- Economic stagnation
- Depletion of natural resources
- Environmental issues
- Food security

**Demographic Change**

- Aging Society
- 2060 estimate
  - 30% decline in population (as in 2010)
  - 40% of population – 65 years+

**Changing society and community**

- Less bonding within the local communities

**Accelerating globalization**

- Further mobilization of people, energy, information, etc.
- More international cooperation with emerging nations

**Great East Japan Earthquake 2011**

- Need for new approaches to development and education
- Further direction
- Establishment of life long learning society based on three principles

1. Development of social competency for survival
2. Development of human resources for brighter future
3. Establishment of learning safety net with diverse abilities
4. Establishment of vibrant communities

**Self-reliance**

- Development of social competency for survival
- Development of human resources for brighter future
- Establishment of learning safety net with diverse abilities
- Establishment of vibrant communities
Background/Motivation (1)

Basic Questions

① 次の平行四辺形の面積を求める式と答えを書きましょう

Correct answer: 96.0%
6th grade

Applied Questions

書きましょう。また、そのわけを、言葉や式などを使って書きましょう

Correct answer: 18.2%
6th grade

Source: National Exam Analysis (2007)
### Background/Motivation (2)
#### Interest in math and science

[TIMSS2007 International Comparison on Math and Science]

<table>
<thead>
<tr>
<th>Grade 4th</th>
<th>Japan</th>
<th>World Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy Math</td>
<td>70%</td>
<td>80%</td>
</tr>
<tr>
<td>I like to study Math</td>
<td>66%</td>
<td>80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 8th</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy Math</td>
<td>39%</td>
<td>67%</td>
</tr>
<tr>
<td>I like to study Math</td>
<td>37%</td>
<td>65%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 4th</th>
<th>Japan</th>
<th>World Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy Science</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>I like to study Science</td>
<td>82%</td>
<td>83%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade 8th</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy Science</td>
<td>59%</td>
<td>78%</td>
</tr>
<tr>
<td>I like to study Science</td>
<td>52%</td>
<td>75%</td>
</tr>
</tbody>
</table>
1. Background/Motivation (3)

**Q: My participation may be able to change social environment in the better direction**

![Bar chart showing societal participation in Japan, USA, China, and South Korea.](chart.png)

<table>
<thead>
<tr>
<th>Country</th>
<th>Very Much Agree</th>
<th>Agree</th>
<th>Don't Agree</th>
<th>Very Much Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>11.4%</td>
<td>57%</td>
<td>25.5%</td>
<td>5.5%</td>
</tr>
<tr>
<td>China</td>
<td>19.6%</td>
<td>43.1%</td>
<td>28.3%</td>
<td>8.4%</td>
</tr>
<tr>
<td>USA</td>
<td>16.9%</td>
<td>52.9%</td>
<td>19.5%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Japan</td>
<td>6.5%</td>
<td>23.6%</td>
<td>49.8%</td>
<td>18.5%</td>
</tr>
</tbody>
</table>

(source) Life and consciousness of secondary school students - international comparison: Japan, USA, China, South Korea (2009. February), Hitotsubashi Liberal Arts Association, Japan Youth Research Institute
2. Education Policy Reform

Competencies required in Knowledge-based society
Problem-solving skills, life-long learning, co-existing

Basic Act on Education (2006)
1) Education goals:
   - Enriched sense of morale
   - Self-reliance, civic responsibility
   - Respect for Japanese culture & tradition
   - World peace and contribution
2) Enhancement of “individual unique ability”
3) Other new ideas: lifelong-learning, collaboration among schools, parents and communities

Amendment of “School Education Act” (2007)
1) Learn basic knowledge and skills
2) Acquire decision making, thinking, and expression skills to solve issues
3) Positive attitude toward learning

Challenges & issues
- Reading comprehension, applied learning
- Learning attitude, study habit, lifestyle
- Lack of confidence, uncertainty about future
- Decline in physical strength

The 2008 New Courses of Study was developed to fulfill the concept
Zest for Living

Solid academic Prowess
Basic Knowledge
Learn & think themselves

Well-rounded character
Self-Control
(discipline)
Cooperate with others
Empathy

Healthy Body
Physical Health
Mental Health

Balance between acquisition of knowledge/skills & sense of judgment / critical thinking

More and more vital principle to live in Knowledge-based society

Source: MEXT (2011)

Only possible with collaboration among schools, families and communities
3. The 2008 New Courses of Study

1. Curriculum change
   - To foster abilities to think, express and make a decision
   - To learn more about Japanese culture and tradition
   - To enrich moral education
   - To keep students healthy
   - To cover current social and global issues for teaching and learning
   - To increase experience-based learning opportunities
   - To foster math and science skill
   - To increase foreign Language education opportunities

2. Increase of lesson hours

3. Balance between acquisition of knowledge/skills & sense of judgment /critical thinking

4. Collaboration among school, family and community

Source: MEXT (2011)
3. The 2008 New Courses of Study

As a tool to achieve objectives of each subject

Enhancing Verbal Activities

Verbal Activities
Ensuring basic ability of Japanese language as well as experiencing beauty of the language. Nurturing abilities to utilise language such as record, summary, explanation, dissertation and debate according to students’ stage of development.
3. The 2008 New Courses of Study
Enhancement of verbal activities

Japanese
Express experiences and learn how to persuade others

Science
More experiments related to daily activities and present in groups

Social Science
Use current affairs, and discuss with reasons

General Studies
Inviting community worker for discussion
4. Teachers’ Perception: Preliminary Survey Result

Used mixed methods (questionnaire survey & interviews)
July 2013- July 2014

- School Curriculum Experts
- Professors
- National Institute Research Specialist
- Private Institute Researchers
- MEXT Officers
- Journalist
- National Institute Research Specialist
- Professors
- Private Institute Researchers
- MEXT Officers
- School Teachers

- 12 survey responses
- 18 interviews
- 277 responses

**ERI-Net categories**
Curriculum framework, achievements and challenges

**Newly added**
Role of teachers, changes in pedagogy, clarity of descriptions of non-cognitive aspects in the 2008 New Courses of Study, changes in students’ attitude, desirable support from the government

**Open-ended questions**
Expectations of the 2008 New Courses of Study
Rational behind policy towards non-cognitive skill integration

Figure 5.1

- meeting societal changes
- low interpersonal skills due to diluted relation with others
- decreased level of students' self-reliance and motivation
- increased international competition
- increasing the "employability" of students
- excessive pressure on students to achieve academic excellence
- declining students' learning achievement
- decreased level of students' physical strength
- boosting economic development
- others

0% 20% 40% 60% 80% 100%

(218) (217) (134) (108) (78) (33) (22) (18) (13) (4)
Comparison of the common learning activities and perceived effective learning

Preceived effective learning activities for transversal competencies

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very much</th>
<th>To some extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra-curricular activities</td>
<td>(42)</td>
<td>(151)</td>
</tr>
<tr>
<td>Field study</td>
<td>(106)</td>
<td>(124)</td>
</tr>
<tr>
<td>Utilization of ICT tools</td>
<td>(52)</td>
<td>(156)</td>
</tr>
<tr>
<td>Individual works/presentations</td>
<td>(126)</td>
<td>(111)</td>
</tr>
<tr>
<td>Group activities</td>
<td>(164)</td>
<td>(74)</td>
</tr>
<tr>
<td>Lectures by teachers</td>
<td>(34)</td>
<td>(171)</td>
</tr>
</tbody>
</table>
## Changes in Students under the 2008 New Courses of Study

The following table and chart illustrate changes in student performance and skills under the new courses of study.

<table>
<thead>
<tr>
<th>Category</th>
<th>Increased</th>
<th>No change</th>
<th>Decreased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative/Critical</td>
<td>31%</td>
<td>68%</td>
<td>1%</td>
</tr>
<tr>
<td>Thinking</td>
<td></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>44%</td>
<td>56%</td>
<td>1%</td>
</tr>
<tr>
<td>Students who have study habits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students who are motivated to learn</td>
<td>56%</td>
<td>43%</td>
<td>0%</td>
</tr>
<tr>
<td>Global Citizenship</td>
<td>32%</td>
<td>68%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who respect the diversity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students who are interested in global issues</td>
<td>26%</td>
<td>74%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who have understanding on community environment and society</td>
<td>38%</td>
<td>61%</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>28%</td>
<td>71%</td>
<td>1%</td>
</tr>
<tr>
<td>Students who acquire basic knowledge and skills</td>
<td>51%</td>
<td>48%</td>
<td>1%</td>
</tr>
<tr>
<td>Students who are fatigued</td>
<td>22%</td>
<td>71%</td>
<td>7%</td>
</tr>
<tr>
<td>Students who have difficulty to keep up with the lesson</td>
<td>6%</td>
<td>79%</td>
<td>15%</td>
</tr>
<tr>
<td>Students who understand the facts clearly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The achievements gap among students</td>
<td>20%</td>
<td>74%</td>
<td>6%</td>
</tr>
<tr>
<td>Standard of academic performance of students</td>
<td>29%</td>
<td>69%</td>
<td>1%</td>
</tr>
<tr>
<td>Students who are confortable with making a presentation in public</td>
<td>61%</td>
<td>39%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who are confortable with discussing with their classmates</td>
<td>74%</td>
<td>26%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who are able to present their thoughts in organized way</td>
<td>75%</td>
<td>24%</td>
<td>1%</td>
</tr>
<tr>
<td>Students who are able to express their thoughts and impressions</td>
<td>84%</td>
<td>16%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who are able to analisis and evalute the information they obtained</td>
<td>47%</td>
<td>53%</td>
<td>0%</td>
</tr>
<tr>
<td>Students who have critical thinking skills</td>
<td>31%</td>
<td>68%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Available training opportunities and its effectiveness perceived

Effectiveness of Training Opportunities

- demonstration lessons at schools: 159
- exchanging ideas with colleagues: 111
- visiting other schools: 88
- training organized by city, village and town: 59
- training organized by prefecture: 94
- training with experts from the partner universities: 13
- online training: 4
- others: 7
Challenges for implementation of the 2008 New Courses of Study

- Lack of understanding from communities: 2% Very much, 18% To some extent, 66% Very little, 10% Not at all, 4% Don't know
- Lack of understanding from parents: 2% Very much, 26% To some extent, 60% Very little, 7% Not at all, 4% Don't know
- Lack of IT equipments: 10% Very much, 38% To some extent, 46% Very little, 3% Not at all, 3% Don't know
- Lack of practical advice: 6% Very much, 44% To some extent, 46% Very little, 2% Not at all, 3% Don't know
- Lack for lesson time: 14% Very much, 45% To some extent, 37% Very little, 3% Not at all, 3% Don't know
- Ambiguity in skills and competencies to be nurtured: 15% Very much, 46% To some extent, 34% Very little, 3% Not at all, 3% Don't know
- Academic/exam oriented society: 19% Very much, 45% To some extent, 32% Very little, 2% Not at all, 3% Don't know
- Lack of education materials: 14% Very much, 53% To some extent, 31% Very little, 1% Not at all, 2% Don't know
- Lack of time for preparation: 41% Very much, 47% To some extent, 10% Very little, 1% Not at all, 1% Don't know
1. Need for transversal skills is evident in Japanese educational context

2. Teachers recognize the importance of transversal skills to be integrated into teaching

3. Development of interpersonal skills is considered particularly important

4. New approach for teaching/learning requires time and training school levels

5. Developing assessment systems by carefully examining the current examination system is crucial
Thank you very much

Tokyo Institute of Technology

Shinobu Yamaguchi
Yuki Yamamoto
Naoko Enomoto
内容の充実化

* 思考力・判断力・表現力を育む
* 伝統や文化に関する教育を充実する
* 道徳教育を充実する
* 健やかな身体を育てる
* 社会の進展に対応した教育を行なう
* 体験活動を充実する
* 理数の力をはぐくむ
* 外国語教育を充実する
**Background/Motivation (3)**

National Exam Analysis (2009, primary schools)

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**Do students exercise writing to communicate their own investigation / opinion?**

<table>
<thead>
<tr>
<th>Group</th>
<th>Yes often</th>
<th>Yes</th>
<th>Not often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>41.5</td>
<td>54.4</td>
<td>4</td>
</tr>
<tr>
<td>Group B</td>
<td>17.4</td>
<td>66.6</td>
<td>15.9</td>
</tr>
</tbody>
</table>

**Assessment Result**

- Group A: 5point > average
- Group B: 5point < average

---

**Do PTA and community participate in school activities as volunteers?**

<table>
<thead>
<tr>
<th>Group</th>
<th>Yes often</th>
<th>Yes</th>
<th>Not often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>57.6</td>
<td>39.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Group B</td>
<td>34</td>
<td>56.1</td>
<td>9.4</td>
</tr>
</tbody>
</table>

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22
2. Educational Policy Reform - The Courses of Study

- Guidelines for national curriculum development
- Revised every 10 years (6 revisions since 1946)
- Importance of non-cognitive aspects was already incorporated

- '70s: Chi-Toku-Tai
  Solid academic prowess, well-rounded character and healthy body

- '98 : Zest for Living

The 1998 Courses of Study

- Introduction of “Zest for Living”
- 30% reduction of curriculum contents and lesson hours
- “five-day school week”
- “Integrated Study Period”

Lessons learned from the 1998 Courses of Study

- Lack of shared understanding among stakeholders
- Overestimating self-reliance of students
- Lack of integration of problem-solving approach to subjects
- Insufficient lesson hours for experience-based learning
- Underestimating decline in educational functions of families/communities

Source: MEXT (2011)