Zest for Living Interpretation of 21st Century Skills

Shinobu Yume Yamaguchi

Junko Onodera

Tokyo Institute of Technology

ERI-net Meeting

Integrating 21st Century Skills in Educational Policies

7-8 March, 2013, Bangkok, Thailand
# Table of Contents

1. Zest for Living: Concept
2. Zest for Living: Implementation
3. Cases: Enhancing skills in classroom (ICT as supportive tools)
4. Shared Issues
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

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: 96.0%
6th grade

Correct answer: 18.2%
6th grade

Source: National Exam Analysis (2007)
## Interest in Math and Science

### Grade 4th

<table>
<thead>
<tr>
<th></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>

### Grade 8th

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>World Average</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>

### Grade 4th

<table>
<thead>
<tr>
<th></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>

### Grade 8th

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>World Average</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>

[TIMSS2007 International Comparison on Math and Science]
### 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>

### 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>

**Assessment Result**

- **5point > average**
- **5point < average**
Amendment of “School Education Act” (2006)
① Learn basic knowledge and skills
② Acquire decision-making, thinking, and expression skills to solve issues
③ Positive attitude toward learning

Challenges/ issues from international test results
• Reading comprehension, applied learning
• Learning attitude, study habit, lifestyle
• Lack of confidence, uncertainty about future
• Decline in physical strength

New course of study of 2011 aims to fulfill the concept

Source: MEXT (2011)
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

Only possible with collaboration among schools, families and communities

Source: MEXT (2011)
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)
Zest for Living: Curriculum

① Language Proficiency
Reporting / writing exercise, and discussion / presentation are incorporated in all subjects

② Math and Science
Repetitive learning and experienced-based learning

③ Foreign Language
Primary school: 5th and 6th grade start learning (35hrs/year)
Junior High School: Listening, speaking, reading and writing skills are fostered (140hrs/year).

④ Japanese Culture and Tradition
To cover traditional and cultural topics in subjects to promote better understanding about Japanese culture and tradition (ex. Martial art)

⑤ Extra curricula activities
Increase opportunities to enrich students’ understanding about society and nature (ex. Camp; office visit and work experience)

⑥ Moral Education
- Encourage a sense of self-reliance and respect for others
- Understand roles and responsibilities in group and society

⑦ Physical Exercise
Promote student’s health
Primary School: basic physical strength
Junior high school: various sport options (dance, martial art)

⑧ Daily life & social issues
Topics related to contemporary issues are highlighted:
Education for sustainable development
Consumer education
Dietary education

Source: MEXT (2011)
Enhance Language Proficiency

Learning through

- Express your experience and opinion
- Interpret and explain concept /equations etc
- Analyze information for discussion
- Structure-do-evaluate-revise (assignment)
- Communicate and develop consensus
Incorporate experimental activities using tools:
To interest students

Repeat important subjects/components/units across grades:
To ensure learning of basic knowledge and skills

Focus on observation and experiment:
To introduce new discoveries

Skills

“Think, Judge and Express”
“Observation and Experimental skills”
Enhance Foreign Languages

Objectives
- Understand different language and cultures
- Foster positive attitude for communication
- Be familiar with sounds and expressions

Primary schools
- Start English in 5th and 6th grade (35 hours per year)
- Develop basis of communication in English

Middle schools
- Four balanced skills:
  - Listening
  - Speaking
  - Reading
  - Writing

Skills

“Cultural Openness”
“Sense of Empathy”
“Positive Attitude for Communication”
“Communicate National Cultural Understanding”
Basis for Global Citizens
• Experiential activities are basis for quality learning and quality living
• Aims to work with others, in social and natural environment
Enhance Moral Education

- By develop content in line with child development via attractive activities teaching materials
- By strengthening instructional system with professionals

- Foster Independence and self-reliance
- Respect my life and others
- Basic life skills/habit e.g. Greetings
- Observe social rules and group regulations
- Roles & responsibilities as a member
- By develop content in line with child development via attractive activities teaching materials
- By strengthening instructional system with professionals

Through open classes
Collaboration with families and local communities

Observe social rules and group regulations
Develop Healthy Body

Life-long interest for physical exercises
- To keep health through sportive life
- Relate PE to daily life and social life

Primary Schools:
- Develop basic physical skills
- Learning on health and safety (mind and body)

Middle schools:
- Expand sports opportunities
- Introduce electives
- Introduce PE theory

“To Live Healthy”
“Physical strength”
Apply Learnt Skills to Better Social Life
“Responsible Citizens”
1. Special Assistance for learning

2. Textbook Reform

3. Student assessment (from relative evaluation to individual evaluation)

4. ICT introduction to learning/teaching
The vision for ICT in Education (2011)

ICT utilization in education aims to enhance quality of education from the following 3 aspects:

1. Information education (cultivating children’s information literacy)
2. Utilization of ICT in course instruction
3. Introduction of ICT for school administrative works

Information literacy, a basis of language activity using acquired knowledge and skills, is an important competency for Zest for living.

Morale education for Internet use and digital communication is also highlighted.

Curriculum

Primary school
- Get familiar with computer and basic skills
- Information morale is covered in morale education class
- Information collection, organization and digital communication are incorporated in academic activities

Junior high school
- Actively and appropriately use computer and the Internet for each subject activity
- Digital art creation and basic programming for measurement and control are required in Technology & Home economics class

Source: MEXT (2011)
Let’s discuss your opinion using digital textbook

- **Purpose:** Discussion by using digital textbook
- **Equipment:** digital blackboard, digital textbook
- **ICT use for discussion and presentation**
- **Teachers’ perception:**
  - Most students’ expressed their opinions by writing on digital blackboard
  - Students seemed to express their opinions by using blackboard
- **Movie:** http://www.eduict.jp/movies/
Digital textbook is used to explain pinion by showing evidences - logics are needed.

Students present and discuss by showing their reasons for argument.

Students' cards are displayed to identify and exchange their opinion.

Teacher’s perception:
- Students are active in communicating own opinion.
- Students are building their logic by presenting.

Source: JAVEA (2012) 本部科学省及び財団法人日本視聴覚教育協会
http://www.javea.or.jp/eduict/jirei/70.pdf

Movie:  http://www.eduict.jp/movies/
Japanese for 2nd grade students

Movie:  http://www.eduict.jp/movies/#No1
最終版には動画を挿入予定
（現在ファイルサイズが大きくなるため、挿入しておらず）

Source: JAVEA (2012)文部科学省及び財団法人日本視聴覚教育協会
http://www.javea.or.jp/eduict/jirei/70.pdf
Learning at school, in families, in communities

Community Collaboration

Family education
Family as a core of education

Community as co-educators
Volunteering
After-school homework sessions
Community patrol
Local cultural events
Effect of community participation (multiple answers)

- Improved communication ability, academic skills and observing roles through community experiences: 69.20%
- Community support for school gave teachers to focus on teaching: 39.70%
- Community support promoted learning environment within community: 34.90%
- Promoted positive attitude of community residents: 11.40%
- No impact yet: 8.40%
- Others: 6.10%

2,405 head offices in 1,004 cities
Students] communicate more with community people

- Yes: 48%
- Neutral: 32%
- No: 13%
- No Answer: 7%

[Parents] my children play more with friends in different grades

- Yes Very Much: 43%
- Yes: 26%
- No Much: 8%
- No At All: 3%
- No Answer: 20%

[Parents] my children are more positive about homework/assignment

- Yes Very Much: 37%
- Yes: 29%
- No Much: 12%
- No At All: 6%
- No Answer: 12%

[Community] more interested in children in the community

- Yes Very Much: 44%
- Yes: 35%
- No Much: 8%
- No At All: 3%
- No Answer: 10%
Relationship between learning assessment/physical fitness and

Learning Assessment (6th grade)

Physical Fitness (5th grade)

Japanese

Math

Boys

Girls
1. Lack of shared understanding among stakeholders

2. Overestimating self-reliance of students

3. Lack of integration of problem-solving approach to subjects

4. Insufficient lesson hours for experience-based learning

5. Underestimating decline in educational functions of families/communities

Source: MEXT (2011)
Thank you very much