Integrating Transversal Competencies in Policy and Practice

Preliminary findings from surveys and class observation in Shanghai

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CONTENT

Research methodology
School policy review
What's happening in school
What’s happening in classroom
What sampled classroom practices look like
Reflection
Setting up Expert Group

Shanghai education commission, Shanghai Teaching and Research Office, Shanghai Academy of Educational Sciences and universities (Shanghai Normal University)

Ask each expert to recommend 2 schools and give us reasons of recommendation

Identifying research purpose and related requirements

Full coverage of transversal skills
Diversity of practices
School location: representative
Generalization. Good practices can be transferred to other school contexts

Selecting target schools from expert recommendation

School visit and conducting survey:
--Principal questionnaire
--Teacher questionnaire (5-10) in each sampled schools
--Class observation

Establishing relationship with schools
Basic profile of surveyed schools and teachers

- Sampled schools (6 schools)
  Not sampled schools (5 schools)

- **Number of Teachers**: 133
  - **Gender**: Male 21%, Female 79%
  - **Teaching years**: Over 11 years, 51.9%
  - **Grades & Subjects**: Covering 1-9 grades and all the subjects, among which top 3: Chinese, Math and Foreign language

Only 9% of teachers teach more than 1 subject
School policy review
Ways of integrating transversal skills in school policy

School development plan

- Integrating transversal skills as Long-term goals for each student (intrapersonal skills, moral education)
- Integrating certain transversal skills in each aspects of school work (e.g. school management, instruction, teachers’ PD, curricula)
- Incorporating certain transversal skills as one specific project listed in the plan
### Curricula plan

<table>
<thead>
<tr>
<th>Course/Subject</th>
<th>Grade 6th</th>
<th>Grade 7th</th>
<th>Grade 8th</th>
<th>Grade 9th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Math</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>English</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ideology and morality</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Integrated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Life Science</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ind. subject</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intergrated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Art</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ind. subject</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Arts</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical and healthy</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Labour and technich</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Information technology</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total classes per week**

- **6th**: 26
- **7th**: 27
- **8th**: 27
- **9th**: 26

### Innovation spirit and practice ability

<table>
<thead>
<tr>
<th>Activities related to subject</th>
<th>Grade 6th</th>
<th>Grade 7th</th>
<th>Grade 8th</th>
<th>Grade 9th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing instruction</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>English lisening</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Structure design</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Math,physics &amp; chemistry</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Activities of interest</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sports</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Group activity</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Enriched**

- **Social practice**: 2 weeks per school year

**Total Classes**

- **6th**: 7
- **7th**: 6
- **8th**: 6
- **9th**: 7

**Inquiry-based**

- **Morning (afternoon)Grouping**: 20 min per day
- **Gymnastics, eye exercises**: 25 min per day

**TOTAL ACTIVITIES PER WEEK**

- **6th**: 34
- **7th**: 34
- **8th**: 34
- **9th**: 34

**Common standard at municipal level**

**School-based: diversity**
Teachers’ Perceptions on important competencies in school development plan

Top5: ① Creativity ② Teamwork/Collaboration ③ Content knowledge ④ Perseverance ⑤ Communication skills

Creativity: 9.76% Very much, 86.99% Very much
Teamwork/collaboration: 13.82% Not at all, 84.55% Very much
Content knowledge: 16.26% Very little, 82.11% Very much
Perseverance: 16.26% Very little, 81.30% Very much
Communication skills: 15.45% Very little, 80.49% Very much
Application skills: 18.70% Very little, 73.86% Very much
Self-motivation: 18.70% Very little, 73.86% Very much
Self-discipline: 19.51% Very little, 77.24% Very much
Conflict resolution: 20.33% Very little, 73.98% Very much
Tolerance: 21.14% Very little, 73.17% Very much
Environmental awareness: 21.95% Very little, 72.36% Very much
Sociability: 24.39% Very little, 69.11% Very much
Critical thinking: 26.02% Very little, 68.29% Very much
Reasoned decision making: 30.03% Very little, 65.04% Very much
Computer literacy: 32.52% Very little, 57.72% Very much
Compassion: 32.52% Very little, 56.10% Very much

>80%
What’s happening in school?
Teacher’s perspective
Teacher’s perspective on current reform

In your country, has there been a reform to integrate transversal competencies in education (e.g., curriculum reform) recently?

- Yes: 37.59%
- No: 6.02%
- Do not know: 56.39%
**Positive changes occurred after reform**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Pre-Reform</th>
<th>Post-Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>Creativity</td>
<td>14%</td>
<td>84%</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>14%</td>
<td>84%</td>
</tr>
<tr>
<td>Teamwork/collaboration</td>
<td>16.33%</td>
<td>81.63%</td>
</tr>
<tr>
<td>Application skills</td>
<td>18%</td>
<td>80%</td>
</tr>
<tr>
<td>Self-motivation</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>Computer literacy</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>Sociability</td>
<td>26%</td>
<td>74%</td>
</tr>
<tr>
<td>Perseverance</td>
<td>26%</td>
<td>72%</td>
</tr>
<tr>
<td>Environmental awareness</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Reasoned decision making</td>
<td>28%</td>
<td>70%</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>Tolerance</td>
<td>34%</td>
<td>64%</td>
</tr>
<tr>
<td>Compassion</td>
<td>36%</td>
<td>62%</td>
</tr>
<tr>
<td>Content knowledge</td>
<td>34%</td>
<td>62%</td>
</tr>
<tr>
<td>Self-discipline</td>
<td>34%</td>
<td>58%</td>
</tr>
</tbody>
</table>

**No changes occurred after reform**
To what extent the current assessment system is appropriate for measuring students’ transversal competencies?
What factors affect teaching student's transversal competences at school level?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Do not know</th>
<th>Very little</th>
<th>To some extent</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ interest</td>
<td>25%</td>
<td>69.70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers’ commitment</td>
<td>31.58%</td>
<td>63.16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from the parents</td>
<td>34.35%</td>
<td>56.49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School leadership</td>
<td>45.45%</td>
<td>42.42%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from the local business</td>
<td>52.67%</td>
<td>28.24%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What’s happening in classroom?
In the classroom, what skills and competencies do teachers expect students to develop?

- Presenting their opinions logically: 77.27%
- Understanding the contents: 73.48%
- Building their own opinions: 70.45%
- Collaborating with other students: 68.18%
- Participating in discussions constructively: 64.89%
- Developing innovative ideas: 58.33%
- Critically analyzing the information: 47.33%
What teaching approaches teachers considered to be effective to help students to develop transversal competences?

• Extra curricula activities
• Group projects and presentations
• Individual project and presentation
• Small group discussion
• Field studies
In reality, what teaching approaches teachers spend more time in classroom?

Over 40% of teachers who report they take more than 30% of their teaching time to lecture

Roughly 85% of teachers who report they take less than 30% of their teaching time to conduct:
  -- Small group discussion
  -- Group projects and presentation
  -- Individual projects and presentation

GAP between knowledge and practice for teachers
What factors in classroom hinder teachers to develop students’ transversal competencies?

- Emphasis on academic achievement (exams)  
  - Do not know 39.10%  
  - Very little 55.64%
- Lack of practical guidance  
  - Not at all 48.09%  
  - Very little 47.33%
- Insufficient awareness of parents  
  - To some extent 43.51%  
  - Very much 43.51%
- Lack of clarification of the definition of transversal competencies  
  - Do not know 53.03%  
  - Very little 37.88%
- Lack of materials  
  - Not at all 58.78%  
  - Very little 32.06%
- Insufficient awareness of community members  
  - Not at all 51.91%  
  - Very little 29.01%
- Lack of IT facility  
  - Not at all 58.02%  
  - Very little 23.66%
Changes are expected to occur

- Assessment;
- Teacher’s training;
- **External support** (over half of teachers disagree that “school, rather than family should have primary responsibilities for students’ learning transversal competencies” in other words, family and other external resources has big role in fostering student’s leaning transversal competencies)
What sampled classroom practices look like?
Research Method

- Materials review
  teaching design, video and teacher’s reflections upon their teaching activities
- Analysis Framework
  ✓ Teaching Design
    Learning goals (include transversal skills?)
    Student’s starting point for learning
    Learning content
  ✓ Classroom Video
    Distribution of teaching time (lecture, group corporation, small group project, ICT)
    Student-centered or teacher-centered
    whether ask challengeable questions
    student’s engagement
    whether care about students with different learning levels
    promote teaching process based on student’s learning progress or prepared teaching plan
  ✓ Focus Group Discussion
    Teacher’s reflections
Effective teaching strategies from Sampled Schools

Taking “critical thinking skills” as example

Teachers from sampled schools

- be **awareness** of developing student’s critical thinking skill in their teaching plan as part of goals
- keep questioning students to facilitate their thinking (**scaffolding**)
- capture student’s puzzles or confusions in classroom to make use of those **tricky moments**, closer to their ZPD
- ask students why they **think in this way**? (**cognition activation**)

2014/12/8
**Cognitive Activation in Math Lessons (PISA 2012)**

<table>
<thead>
<tr>
<th>Thinking about the mathematics teacher that taught your last mathematics class: how often does each of the following happen?</th>
<th>% Answering “Always or almost always” and “Often”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shanghai</strong></td>
<td><strong>OECD Average</strong></td>
</tr>
<tr>
<td>The teacher asks questions that make us reflect on the problem.</td>
<td>66</td>
</tr>
<tr>
<td>The teacher gives problems that require us to think for an extended time.</td>
<td>31</td>
</tr>
<tr>
<td>The teacher asks us to decide on our own procedures for solving complex problems.</td>
<td>43</td>
</tr>
<tr>
<td>The teacher presents problems for which there is no immediately obvious method of solution.</td>
<td>32</td>
</tr>
<tr>
<td>The teacher presents problems in different contexts so that students know whether they have understood the concept.</td>
<td>65</td>
</tr>
<tr>
<td>The teacher helps us to learn from mistakes we have made.</td>
<td>74</td>
</tr>
<tr>
<td>The teacher asks us to explain how we have solved a problem.</td>
<td>69</td>
</tr>
<tr>
<td>The teacher presents problems that require students to apply what they have learned to new contexts.</td>
<td>69</td>
</tr>
<tr>
<td>The teacher gives problems that can be solved in several different ways.</td>
<td>66</td>
</tr>
</tbody>
</table>
Effective teaching strategies from Sampled Schools

- more use of group discussion and activities as major ways of teaching (giving students more time for their learning)
- encourage students to make their thinking more explicit through visualization and doing by hand
Reflection
1. What are important transversal skills for students in Shanghai

From cognitive performance to characteristics as a learner
### Student’s Performance on Problem solving and ICT (PISA 2012)

<table>
<thead>
<tr>
<th></th>
<th>Problem-solving</th>
<th>Mathematics (computer-based)</th>
<th>Digital Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai-China</td>
<td>536</td>
<td>562</td>
<td>531</td>
</tr>
<tr>
<td>Top 2</td>
<td>562, Singapore</td>
<td>566, Singapore</td>
<td>567, Singapore</td>
</tr>
<tr>
<td></td>
<td>561, Korea</td>
<td>562, Shanghai</td>
<td>555, Korea</td>
</tr>
<tr>
<td>OECD Average</td>
<td>500</td>
<td>497</td>
<td>497</td>
</tr>
</tbody>
</table>

We have less advantages in computer-based assessment.

- ICT
- Media literacy (critically analyzing information)
- Problem solving (active interaction with contexts)
2. **Policy** (system level)
   - more integrated
   - more consecutive (alignment)

3. **Assessment**
   - tools
   - tools to be learned and used

4. **External support**
   - strengthening relationship with the externals

5. **Teacher training**
   - clear definition
   - learn how to do
Thank You!

:)