Beyond PD:
Teacher Professional Learning in High-Performing Systems

Appendices

Ben Jensen, Julie Sonnemann, Katie Roberts-Hull and Amélie Hunter
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List of Interviewed Participants
# Appendix 1: List of Interviewed Participants

## British Columbia

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<th>Name</th>
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<tr>
<td>Rod Allen</td>
<td>Assistant Deputy Minister</td>
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<td>Maureen Dockendorf</td>
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<td>Ministry of Education</td>
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<tr>
<td>Meena Mangate</td>
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<tr>
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<tr>
<td>Anne-Marie Middleton</td>
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<tr>
<td>Audrey Hobbs Johnson</td>
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<td>Jessica Antosz</td>
<td>Manager of Professional Learning</td>
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<td>Harry Janzen</td>
<td>Dean, Faculty of Education</td>
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<td>Mark Edwards</td>
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<td>Paige Fisher</td>
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<td>Kathy Sanford</td>
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<td>Debbie Koehn</td>
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<tr>
<td>Donna Weaving</td>
<td>Network Coordinator</td>
<td>Networks of Inquiry and Innovation, Aboriginal Enhancement Schools Network</td>
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## Hong Kong

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<tr>
<td>Catherine K. Chan</td>
<td>Deputy Secretary for Education</td>
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<td>Michelle Wai-Ching Wong Yau</td>
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<tr>
<td>Stephen Yam-Wing Yip</td>
<td>Principal Assistant Secretary, Curriculum Development</td>
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<td>Benjamin Yung</td>
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<tr>
<td>Brenda Lo</td>
<td>Retired Former Head of School-Based Support Services</td>
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<td>Lai-Wa Cheng</td>
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<td>Catalina Shuk-Ling Sit</td>
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<td>Joyce Sau-Mei Yup</td>
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<td>Jane Mok</td>
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<td>Carrie Willis</td>
<td>Chairperson</td>
<td>The Committee on Professional Development of Teachers and Principals (COTAP)</td>
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## Appendix 1: List of Interviewed Participants

### Hong Kong

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<td>Kit-Tai Hau</td>
<td>Pro-Vice Chancellor and Vice President, Professor of Educational Psychology</td>
<td>The Chinese University of Hong Kong</td>
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<td>Allan Walker</td>
<td>Dean, Faculty of Education and Human Development</td>
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<td>Special Advisor to the President</td>
<td>The Hong Kong Institute of Education</td>
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<td>Paul Kan Wing Cham</td>
<td>Director, Centre for Small Class Teaching</td>
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<td>Director, Department of Curriculum and Instruction</td>
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<td>The University of Hong Kong, Faculty of Education</td>
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<td>Kai-Ming Cheng</td>
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<tr>
<td>Sau Yan Hui</td>
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## Beyond PD: Teacher Professional Learning in High-Performing Systems

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
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<tr>
<td>Gu Xiangdong</td>
<td></td>
<td>Youai Experimental Middle School</td>
</tr>
<tr>
<td>Zhang Minxuan</td>
<td>Professor and Director of Research, Institute of Comparative Education and Former President</td>
<td>Shanghai Normal University</td>
</tr>
<tr>
<td>Wang Jie</td>
<td>Professor</td>
<td>Shanghai Academy of Educational Sciences</td>
</tr>
<tr>
<td>Jian-jun Wang</td>
<td>Professor</td>
<td>East China Normal University</td>
</tr>
<tr>
<td>Professor Yang</td>
<td>Professor</td>
<td>East China Normal University</td>
</tr>
<tr>
<td>Xiu Chen Cravens</td>
<td>Assistant Professor of the Practice in Education Policy</td>
<td>East China Normal University</td>
</tr>
<tr>
<td>Ms. Lin</td>
<td>Deputy Director, Professional Learning</td>
<td>Teachers’ Institute of Xuhui District Shanghai</td>
</tr>
<tr>
<td>Chen Xiao</td>
<td>Chief Editor</td>
<td>Shanghai Education Press</td>
</tr>
<tr>
<td>Shen Zuyun</td>
<td>Associate Chief Editor</td>
<td>Shanghai Education Press</td>
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<tr>
<td>Zhang Yun</td>
<td>CEO</td>
<td>Psylife</td>
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## Singapore

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<thead>
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<tbody>
<tr>
<td>Chua-Lim Yen Ching</td>
<td>Executive Director Depute Director-General of Education (Professional Development)</td>
<td>Academy of Singapore Teachers Ministry of Education</td>
</tr>
<tr>
<td>Teo Tiong San</td>
<td>Deputy Director, Standards &amp; Research Branch</td>
<td>Academy of Singapore Teachers</td>
</tr>
<tr>
<td>Chan Yew Wooi</td>
<td>Deputy Director, Professional Development</td>
<td>Academy of Singapore Teachers</td>
</tr>
<tr>
<td>Charles Chew</td>
<td>Principal Master Teacher, Science Cluster</td>
<td>Academy of Singapore Teachers</td>
</tr>
<tr>
<td>Lee Hwa Phaik</td>
<td>Master Teacher, Humanities Cluster</td>
<td>Academy of Singapore Teachers</td>
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<tr>
<td>Li Yen See</td>
<td>Master Teacher, Singapore Teachers’ Academy for the Arts</td>
<td>Academy of Singapore Teachers</td>
</tr>
<tr>
<td>Cynthia Seto</td>
<td>Master Teacher, Mathematics Cluster</td>
<td>Academy of Singapore Teachers</td>
</tr>
<tr>
<td>Tay May Yin</td>
<td>Principal Master Teacher</td>
<td>English Language Institute of Singapore</td>
</tr>
<tr>
<td>Benjamin Tan</td>
<td>Master Teacher</td>
<td>Physical Education and Sports Teachers’ Academy</td>
</tr>
<tr>
<td>Poon Chew Leng</td>
<td>Deputy Director, Research and Evaluation, Planning Division</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>Karen Lam</td>
<td>Senior Specialist, Curriculum Policy Officer</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>Goh Sai-Ee</td>
<td>Academy Officer, Standards and Research Branch</td>
<td>Ministry of Education</td>
</tr>
<tr>
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<tr>
<td>Phua Si Lin</td>
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<td>Ministry of Education</td>
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<tr>
<td>Ong Woei Ling</td>
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<tr>
<td>Rajaskaran Sockalingam</td>
<td>Academy Officer, Standards and Research Branch</td>
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</tr>
<tr>
<td>Wong-Ng Yin Suan Julie</td>
<td>Academy Officer, Standards and Research Branch</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>Liu Woon Chia</td>
<td>Dean, Practicum and School Partnerships</td>
<td>National Institute of Education</td>
</tr>
<tr>
<td>Vivien Huan</td>
<td>Associate Dean, Programme &amp; Student Development</td>
<td>National Institute of Education</td>
</tr>
<tr>
<td>Pang Choon How</td>
<td>Principal</td>
<td>Chung Cheng High School (Main)</td>
</tr>
<tr>
<td>Francis Foo</td>
<td>Principal</td>
<td>Temasek Primary School</td>
</tr>
<tr>
<td>Lee Wee Lin Maureen</td>
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<td>Anglican High School</td>
</tr>
<tr>
<td>Sharida Binte Batcha Sahib</td>
<td>Principal</td>
<td>South View Primary School</td>
</tr>
<tr>
<td>Tan Hwee Tsian Hilda</td>
<td>Principal</td>
<td>Pasir Ris Secondary School</td>
</tr>
<tr>
<td>Vincent Kang</td>
<td>Vice Principal</td>
<td>Anglican High School</td>
</tr>
<tr>
<td>Tan May Leng</td>
<td>Vice Principal</td>
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<td>Tan Lay Gin</td>
<td>Vice Principal</td>
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<tr>
<td>Sakinah Sarip</td>
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<td>Tan Geok Lan</td>
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</tr>
<tr>
<td>Cecilia Tan</td>
<td>Vice Principal</td>
<td>South View Primary School</td>
</tr>
<tr>
<td>Cheum Foong Yee</td>
<td>Vice Principal</td>
<td>Keming Primary School</td>
</tr>
<tr>
<td>Joanne Chong</td>
<td>School Staff Developer</td>
<td>Temasek Primary School</td>
</tr>
<tr>
<td>Amos Goh</td>
<td>School Staff Developer</td>
<td>Chung Cheng High School (Main)</td>
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<tr>
<td>Chan Chui Leng</td>
<td>School Staff Developer</td>
<td>Anglican High School</td>
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<tr>
<td>Zulaiha Shireen</td>
<td>School Staff Developer</td>
<td>Pasir Ris Secondary School</td>
</tr>
<tr>
<td>Tina Tan</td>
<td>School Staff Developer</td>
<td>Keming Primary School</td>
</tr>
<tr>
<td>Inpavally Murosamy</td>
<td>Head of Department</td>
<td>Keming Primary School</td>
</tr>
<tr>
<td>Radin Anita Abu Bakar</td>
<td>Head of Department</td>
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</tr>
<tr>
<td>Madame Nazlie Binte Abdul Rashid</td>
<td>Head of Department</td>
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</tr>
<tr>
<td>Tay Ngee Peng</td>
<td>Head of Department, Science</td>
<td>Pasir Ris Secondary School</td>
</tr>
<tr>
<td>Chan Hwee Leng</td>
<td>Subject Head</td>
<td>Anglican High School</td>
</tr>
<tr>
<td>Wong-Chai Gek Mui</td>
<td>Lead Teacher</td>
<td>South View Primary School</td>
</tr>
<tr>
<td>Mariamah Yusoff</td>
<td>Lead Teacher</td>
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<tr>
<td>Ahmad Hashikin</td>
<td>Senior Teacher</td>
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<tr>
<td>Teo Wee Sim</td>
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<tr>
<td>Audrey Tan Shu-Hui</td>
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<td>Yeo-Ng Siok</td>
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<td>Temasek Primary School</td>
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<tr>
<td>Char Wai Han</td>
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<tr>
<td>Cassandra</td>
<td></td>
<td></td>
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<td>Jocelyn Goh</td>
<td>Teacher</td>
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<td>Nur Hanis</td>
<td>Teacher</td>
<td>Keming Primary School</td>
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<td>Mavis Ho</td>
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<tr>
<td>Yan Xiuru</td>
<td>Teacher</td>
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</table>
Appendix 2
Background Brief for British Columbia
Background Brief for British Columbia

British Columbia (B.C.) demonstrates levels of both high achievement and high equity in education. B.C. has ranked among the best education systems in the world since 2000. Whilst B.C.’s mathematics scores have declined since 2003, overall the province remains consistently high-achieving. In the 2012 PISA Report, B.C. ranked 6th in reading and 12th in mathematics.

B.C.’s 2011 Education Plan details ambitious programs which involve increasing the level of personalized learning, improving access to teacher professional learning, embedding flexibility and choice for all stakeholders, accelerating the implementation of technology, and overseeing the development of a new curriculum.

British Columbia Education at a Glance

Demographics (2013):

- 85 percent of the population lives in urban areas.
- The child poverty rate is 18.6 percent, the highest in Canada.
- The public school population is 11 percent Aboriginal students and 11 percent English Language Learners.

Figure 1: British Columbia Mean PISA Scores, 2012

Size of the schooling sector:

<table>
<thead>
<tr>
<th>Schools</th>
<th>Students</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,600 (approx.)</td>
<td>558,985</td>
<td>24,828</td>
</tr>
</tbody>
</table>

Organization of schools:

- 88 percent of students attend public schools.
- 12 percent of students attend independent schools.
- All schools receive provincial funding based on a ‘per-pupil’ formula.
- There is limited public school choice: students may apply for schools outside their catchment zone.

Curriculum:

- The school curriculum is set by the province.
- B.C. is currently developing a new curriculum which will be piloted in Spring 2015.
- The last big curriculum shift was in the mid-1990s.

Summative Assessment:

- Provincial Foundation Skills Assessment (FSA) administered annually to grades 4 and 7.
- Additional provincial exams in grade 10, 11 and 12.
- Pan-Canadian Assessment Program (PCAP) administered every 3 years to a sample of 8th grade students.

Formative Assessment

- The province released the B.C. Performance Standards in 2000 to support ongoing instruction, assessment, and evaluation.
Teaching in British Columbia

Initial teacher education:

- 9 programs exist in B.C. and are delivered by independent universities.
- Graduating teachers are certified by the Ministry through the Teacher Regulation Branch.

Teaching in schools (2013/14):

- Average class size:\(^{11}\)
  - 21.5 in grades 1-3
  - 25.7 in grades 4-7
  - 23.0 in grades 8-12
- Average teaching hours/week (approx.): 23 \(^{12}\)
- Average teacher salary (CAD): $71,194 \(^{13}\)
- Average years of experience: 12.6 \(^{14}\)

Schooling and Governance

Figure 2: Structure of Schooling – British Columbia


Figure 3: British Columbia Governance Structure

Key Government Responsibilities

- Minimal oversight of education
  - Providing small federal grants to districts
- Setting standards and implementing policies
  - Curriculum design
  - Providing district funding
  - Administering exams
  - Setting Standards for teacher training and certification
- Funding and supporting schools
  - Supporting curriculum implementation
  - Provide school funding
  - Setting directions for teacher development
  - Staffing schools
  - Writing Achievement Contracts with the Ministry

Source: British Columbia Ministry of Education, n.d.

Teacher Professional Learning

B.C. has a strong focus on encouraging teacher collaboration, fostered through inquiry groups: these are the main avenues for job-embedded professional learning. Teacher participation varies by school, but the effort is supported by the Ministry, professional associations, and many districts. In addition, many schools and districts devote resources to training teachers in the use of formative assessment. This work is supported by the use of the B.C. Performance Standards, a set of tools for classroom assessment released by the Ministry in 2000.
Goals, policies and structures

Focus on formative assessment and job-embedded learning: The Ministry released the Performance Standards in 2000 to provide a tool for classroom assessment. Districts are moving to train principals and teachers in assessment as a key part of professional learning. In the 2013-14 school year, more than three out of four districts included a focus on formative assessment in their Achievement Contracts with the Ministry.15

Inquiry: The Ministry first funded the Networks of Inquiry and Innovation (NOII) in 2000 to engage teachers in the new Performance Standards. Teachers use a ‘Spiral of Inquiry’ method to assess student learning, make plans for improvement, implement new practices, and re-assess their teaching methods to gauge effectiveness. More than four out of five districts in B.C. have some form of inquiry focus in some or all of their schools.16

Informal leadership and school support: The system focuses on empowering teachers as leaders to move new initiatives forward. Instead of mandating programs, districts provide formal and informal leadership opportunities to teachers. For example, the Burnaby District hires teachers as subject-area consultants to schools to help teacher professional learning.

Time and flexibility: Schools give teachers 30-60 minutes every few weeks for collaboration. Teachers can make more time by combining classes or having other teachers take over classes. Each district also schedules six PD days where teachers are in session but students are not.

Professional associations: The B.C. Teacher Federation (BCTF) also provides opportunities for mentoring, teacher inquiry, and traditional workshop programs.

Professional learning programs

Within-school professional learning communities: There is a growing focus on making within-school teacher inquiry groups the main avenue for professional learning. Some districts give grants to teacher teams for inquiry projects, and many schools link their teacher inquiry goals to professional learning goals and to school and district goals.

Cross-district networks: Many schools participate in networks that bring schools together across the province. Although the programs are partially Ministry-funded, the Networks of Inquiry and Innovation (NOII) and other cross-district networks are voluntary. The majority of participants are teachers, but each team includes one formal school leader (principal or vice principal).17 School teams create an inquiry question and meet with the network after-school three times during the year to share strategies. Each school is asked to write a short case study at the end of the year.18

Courses and workshops: Teachers often receive training through traditional workshops or graduate school courses.

Training for inquiry: Some graduate programs focus on inquiry, such as the Certificate in Innovative Educational Leadership (CIEL). As an example of a district-based program, the principal at a secondary school in the Burnaby district runs an inquiry-based graduate program just for district teachers.
### Beyond PD: Teacher Professional Learning in High-Performing Systems

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within-school learning communities</strong></td>
<td>Groups of teachers do inquiry on one specific topic for most or all of the school year. Teachers meet every 1-2 weeks for 30-60 minutes for inquiry, where they share evidence and give each other feedback. Participation varies by school and district. In the 2013-14 school year, more than four out of five districts in B.C. participated.</td>
</tr>
<tr>
<td><strong>Cross-district networks</strong></td>
<td>Many schools participate in cross-district inquiry networks. The Networks of Inquiry and Innovation (NOII) were established in 2000. Newer networks include the Aboriginal Enhancement Schools Network (AESN) and the Healthy Schools Network (HSN). School teams meet with the network three times per year to share and get feedback. All participants share findings at the end across schools and districts.</td>
</tr>
<tr>
<td><strong>External expertise</strong></td>
<td>Many districts hire experienced teachers as consultants to schools. Consultants are usually subject-specific. They target specific teaching needs (e.g., pedagogy or content) as well as build capacity in professional learning (e.g., how to do inquiry or formative assessment).</td>
</tr>
<tr>
<td><strong>Individual study</strong></td>
<td>Teachers get a salary bump to undertake Masters study, and many graduate programs are now focused on inquiry.</td>
</tr>
<tr>
<td><strong>Beginning teacher induction</strong></td>
<td>Varies by district - no major programs across the province</td>
</tr>
<tr>
<td><strong>Mentoring</strong></td>
<td>Some districts have programs, mostly for new teachers. The B.C. Teachers' Federation also runs a program for new teachers.</td>
</tr>
<tr>
<td><strong>Observation</strong></td>
<td>Informal observation and feedback from principals Becoming more common for teachers to open their practice to other teachers, but still informal</td>
</tr>
<tr>
<td><strong>Seminars, workshops</strong></td>
<td>Varies by school and district; teachers access on an opt-in basis</td>
</tr>
</tbody>
</table>
Box 1 Further Resources for British Columbia

Education reform and strategy documents
- 2011 Education Plan
- Performance Standards
- Accountability Plan
- School Planning Councils Overview

Links to programs
- Networks of Inquiry and Innovation
- Aboriginal Enhancement Schools Network (AESN)
- Healthy Schools Network.
- Changing Results for Young Readers (CR4YR)

References for Appendix 2

2. British Columbia Ministry of Education, 2013b, retrieved 12 Nov. 14
9. Poole, 2007
12. Based on analysis of collective agreements from 2006-2011
15. Based on analysis of the 2013-14 district Achievement Contracts.
16. Based on looking at the 2013-14 district Achievement Contracts.
17. Personal communication, Judy Halbert and Linda Kaser, 29 October 2014
Appendix 3

Background

Brief for Hong Kong
Background Brief for Hong Kong

Hong Kong has implemented major reforms over the last 15 years to improve learning and teaching. In 2000, Learning to Learn detailed a range of curriculum, assessment and pedagogy improvements designed to help students develop skills such as critical thinking, problem-solving, communication and creativity. The level of Hong Kong students’ reading competency has steadily increased since 2003 and in 2012 Hong Kong ranked 2nd in PISA. It is also ranked 3rd in mathematics and 2nd in science.

Hong Kong Education at a Glance

Demographics:
- There are 7.2 million residents, 93% Chinese, with small Indonesian and Filipino populations.

Size of school sector:

<table>
<thead>
<tr>
<th>Schools</th>
<th>Students</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>569</td>
<td>320,918</td>
</tr>
<tr>
<td>Secondary</td>
<td>514</td>
<td>395,345</td>
</tr>
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</table>

Organization of schools:
- The Education Bureau funds both government and non-government schools.
- The majority are non-government schools which fall into two categories: ‘aided’ and ‘direct subsidy’ schools.
- Aided schools are operated by independent school-sponsoring bodies.
- Direct-subsidy schools have a greater level of autonomy over things such as charging additional fees, curriculum design and student admissions.

Curriculum:
- A new national curriculum was developed by the Curriculum Development Institute and implemented by the Education Bureau in 2002.

Assessment:
- Territory-wide student assessments conducted in grades 3, 6 and 9 are used to gauge the level of student learning and school performance in Chinese, English and mathematics. The results are not published, nor are they distributed to students and parents.
- Curriculum and assessment reform are linked, and teachers are encouraged to use formative assessment.

Teaching in Hong Kong

Initial teacher education:
- Since 2005, all graduates of initial teacher education programs must hold undergraduate degrees and register with the Education Bureau. The Hong Kong Institute of Education is the main provider of pre-service and in-service programs.

Teaching in schools
Schooling and governance

Figure 5: Structure of Schooling – Hong Kong

<table>
<thead>
<tr>
<th>Level</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>4</td>
</tr>
<tr>
<td>Associate Degree/Higher Diploma</td>
<td>2</td>
</tr>
<tr>
<td>Technical and Vocational</td>
<td>2</td>
</tr>
<tr>
<td>Senior secondary</td>
<td>3</td>
</tr>
<tr>
<td>Junior secondary</td>
<td>3</td>
</tr>
<tr>
<td>Primary</td>
<td>6</td>
</tr>
<tr>
<td>Pre-school</td>
<td>3</td>
</tr>
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</table>

Source: OECD, 2010c p. 164

Figure 6: Hong Kong Governance Structure

Key Government Responsibilities

- National Government
  - Formulating, overseeing and reviewing all education policies, programs and legislation
    - Curriculum design
    - Fundamental allocation
    - Setting Standards
- Education Bureau Support services
  - School administration
  - Curriculum development
  - Teaching and learning
  - Student guidance
  - Psychological services
- 4 Regional Offices
- 18 School Districts
- Schools (between 30-110 per district)

Teacher professional learning

Hong Kong has a strong focus on encouraging teachers to learn from peers through lesson observation, collaborative lesson planning and sharing professional learning lessons across the system. Lesson observation and collaborative lesson planning have been gradually implemented through schools since 2003 as part of the curriculum development reforms.

The Education Bureau sets the overall professional learning policy and provides support through in-school support services, coordinates networks and funds both teaching research and innovative projects. However, schools and teachers have autonomy over the type of professional learning they undertake and the form of support they access from the Education Bureau.

Goals, Policies and Structures

Teacher Competency Framework

- Introduced in 2003, the Teacher Competency Framework details teacher competencies across four domains: Learning and Teaching, School Development, Student Development and Professional Services to the Community.11
- Different competencies are described across career stages, ranging from novice to experienced teacher.
- The Framework is linked to the Teacher Induction Scheme for mentoring and appraisal.

Continuing Professional Development Framework

- Under the Continuing Professional Development Framework, all teachers must undertake at least 150 hours professional learning over three years.12
- All professional learning activities count towards the target. Initially, the policy advised
Appendix 3: Background Brief for Hong Kong

that approximately 50 percent should be within the school and 50 percent outside the school, however, this requirement has since been removed.

Providers of professional learning

- The Education Bureau coordinates and funds extensive annual programs of seminars and workshops, on-site support for teachers, networks and university support programs for teaching research.
- Universities offer in-service courses.
- The Hong Kong Teachers’ Centre provides ongoing professional learning through seminars, online resources and grants.\(^{13}\)

Program Descriptions

<table>
<thead>
<tr>
<th>Program Description</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Mentoring</strong></td>
<td>Mentoring is offered for beginning teachers as part of induction process.</td>
</tr>
<tr>
<td><strong>Beginning teacher induction</strong></td>
<td>All beginning teachers are assigned a mentor.</td>
</tr>
<tr>
<td></td>
<td>Individual programs are designed by schools and guided by EDB (e.g., beginning teacher induction toolkit).</td>
</tr>
<tr>
<td></td>
<td>Program includes professional learning activities such as lesson observations and reflective journal on teaching, learning and assessment.</td>
</tr>
<tr>
<td></td>
<td>Self-reflection undertaken and mentor feedback provided on</td>
</tr>
<tr>
<td></td>
<td>• Teaching and learning skills and strategies,</td>
</tr>
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<td></td>
<td>• Student development (including identifying learning needs and pastoral care), and</td>
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<tr>
<td></td>
<td>• School development including school vision, home-school collaboration and societal change.</td>
</tr>
<tr>
<td></td>
<td>(No guidance provided on how often teachers and mentors meet.)</td>
</tr>
<tr>
<td><strong>Teacher appraisal</strong></td>
<td>Appraisals are conducted annually with schools designing and implementing their own processes, guided by EDB.</td>
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<tr>
<td></td>
<td>This typically includes classroom observation by principal and/or subject coordinator.</td>
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<tr>
<td></td>
<td>It may also include 'homework inspections' by subject coordinator who provides feedback on homework and assessment design and its links to curriculum and learning.</td>
</tr>
<tr>
<td><strong>Lesson observation</strong></td>
<td>Lesson-observation is used for multiple purposes such as peer-to-peer observations, teacher appraisal and external school reviews.</td>
</tr>
<tr>
<td></td>
<td>Observation and feedback are linked to school strategy and areas for pedagogical improvement.</td>
</tr>
<tr>
<td></td>
<td>Peer-to-peer observation is conducted in all schools and includes pre-observation meeting to discuss lesson objectives, observation and post-lesson feedback.</td>
</tr>
<tr>
<td></td>
<td>Frequency varies between schools; in some schools teachers are observed by peers at least twice per year.</td>
</tr>
</tbody>
</table>
### Collaborative lesson planning
Teachers of the same subject and year group meet once per week (or cycle) to discuss subject lessons for the week.

Common lessons are often timetabled.

Discussions are focused on curriculum and pedagogy including sequencing of lessons within the curriculum, learning objectives, pedagogy, resources and assessment tasks.

### Coaching and expert advice to schools
Division of EDB offers School-Based Support Services (SBSS).

This includes a range of on-site professional support services for schools and teachers on an opt-in basis.

Teams of former teachers and principals visit schools to assist professional learning activities including collaborative lesson planning, lesson observation and school-based curriculum development.

University Support Partners scheme funds experts to work in schools to develop pedagogy.

Quality Education Fund provides funds to schools to contract in expert assistance for professional learning and pilot innovative practices.

### Networks
A range of collaborative networks are facilitated through EDB including:

- Curriculum leaders learning community,
- Professional development schools to mentor other schools, coordinated regionally, and
- Principal Support Network - retired principals run seminars and mentor current principals.

### Sharing professional learning lessons
Sharing of teaching and learning lessons is built into the school system:

- Teachers seconded to EDB to participate in external school reviews,
- Experts - share lessons with schools participating in the same university support partners/pedagogy research, seminars on lessons from teacher exchanges,
- Conferences on lessons from school-based support programs, and
- Within schools, including teaching and learning exhibitions.

### Seminars, workshops
Online resources available for teachers across key learning areas and grade levels include teaching and lesson plans, assessment task banks, links to curriculum documents, and professional development training calendar (see for example Hong Kong EdCity).

Annual calendars of seminars and workshops are published.
Appendix 3: Background Brief for Hong Kong

Box 2 Further Resources for Hong Kong

Education reform and strategy documents

- Curriculum Development – ‘Assessment for Learning’ including resource bank
- New Academic Structure for Senior Secondary Education and Higher Education
- Example Curriculum Guide – Basic Education (Elementary 1-6), New Senior Secondary Curriculum Guide
- Professional Development Framework: Towards a Learning Profession: Continuing Professional Development and Teacher Competency Framework

Professional learning resources

- Education Bureau – School-Based Support Services
- Education Bureau – University Support Program
- Education Bureau – Language Learning Support Services
- Education Bureau – Collaborative Lesson Planning

References for Appendix 3

1. OECD, 2013a, p. 177
2. OECD, 2013a, p. 65
4. For 2013/14, Education Bureau, 2014c, Education Bureau, 2014h
5. Education Bureau, 2014j; Yung Man-sing, 2006
6. In Hong Kong, these grade levels are referred to as Primary 3, Primary 6 and Secondary 3.
7. Education Bureau, 2008
8. Education Bureau, 2008
9. Information Services Department, Hong Kong Special Administrative Region Government, 2014
10. For 2013/14, Education Bureau, 2014c, Education Bureau, 2014h
11. Advisory Committee on Teacher Education and Qualifications, 2003
12. As per the Education Bureau’s Continuing Professional Development policy, Advisory Committee on Teacher Education and Qualifications, 2003
13. Education Bureau, 2014a
Appendix 4
Background Brief for Shanghai
Background Brief for Shanghai

Shanghai has undergone substantial education reform over the last 30 years. It became one of the first cities in China to achieve universal primary and junior secondary education and now ranks number one in reading, mathematics and science in PISA.1

A major curriculum reform commenced in 1986 signaled a major shift away from knowledge acquisition to skill development. This was accompanied by an increased focus on pedagogy and teacher development.

In China, education is highly valued and seen as the key opportunity to a better life and social status.

Shanghai Education at a Glance

Demographics:3

• Shanghai’s population is 24 million, 98% Han Chinese.

Size of school sector:4

<table>
<thead>
<tr>
<th></th>
<th>Schools</th>
<th>Students</th>
<th>Teachers</th>
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<tbody>
<tr>
<td>Primary</td>
<td>759</td>
<td>792,476</td>
<td>48,100</td>
</tr>
<tr>
<td>Secondary</td>
<td>762</td>
<td>593,513</td>
<td>51,800</td>
</tr>
</tbody>
</table>

Organization of schools:

• Includes a mix of public and private schools, although most schools are classified as public.
• Public schools can receive both government funding and private funding.
• Shanghai traditionally has more power than other provinces to experiment and pilot new policies.

Curriculum:

• National curriculum is set by the Chinese government. Shanghai has piloted local curriculum reforms.5

Assessment:

• Junior secondary exam and national higher education entrance exams are given.
• Schoolwork standard exam – senior secondary exam that assesses student performance in ten subjects over three years was introduced 2009.
• District-level tests - apply to all grades, set by each individual district.
• Teaching quality tests every term are a standardized test for the district, students are picked randomly.6
• Attempts are being made to reduce exam pressures. End of primary school examinations have been abolished. Recent curriculum and assessment reforms include project-based learning.7

Teaching in Shanghai

Initial teacher education:

• All teachers hold bachelor degrees.8
• Different models of initial teacher education:9
  • 4-year model including training in both an academic discipline & education supported by 2-week teaching posting each term and 8-week internship at end of final year
  • 3-year academic study & 2-year Master of Education professional degree

Figure 7: Shanghai PISA Results (2012)

Source: OECD, 2013a

Table 1: Size of school sector

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<tr>
<th></th>
<th>Schools</th>
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<th>Teachers</th>
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<td>762</td>
<td>593,513</td>
<td>51,800</td>
</tr>
</tbody>
</table>

Figure 7: Shanghai PISA Results (2012)

Source: OECD, 2013a
Beyond PD: Teacher Professional Learning in High-Performing Systems

- 4-year Bachelor’s degree & 3-year academic Master’s degree

Teacher specialization:
- Teachers specialize in subject areas in both primary and secondary.10
- Specialist areas include math, Chinese, science, music and physical education.

Teaching in schools:
- Teaching time: 12-16 periods per week (approximately 10-12 hours) depending on the subject.11
- Average class size: 30-40

Teacher Professional Learning

Shanghai has a significant focus on professional learning embedded in teachers’ everyday practice. Every teacher must participate in regular teacher research groups, lesson groups, lesson observation, mentoring and demonstration classes.

While the Shanghai Municipal Education Commission sets high-level professional learning policies and guidelines, district academies are the key delivery body for professional learning. They oversee, design and deliver professional learning for schools.

Schooling and governance

Figure 8: Structure of Schooling - Shanghai

<table>
<thead>
<tr>
<th>University (4 years)</th>
<th>Polytechnics (3 years)</th>
<th>Technical Institute (1-2 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior College (2-3 years)</td>
<td>Secondary (4 years express, 5 years academic)</td>
<td>Secondary – vocational (4 years)</td>
</tr>
<tr>
<td>Primary (6 years)</td>
<td>Pre-school (3 years)</td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD, 2010c p. 164

Goals, Policies and Structures

- Shanghai Municipal Education Commission sets hourly requirements.
- Beginning teachers undertake 360 hours of professional learning in their first 3-5 years.12
- More experienced teachers applying for a promotion must undertake 540 hours of professional learning over five years.13
- Expectation that every in-service teacher undertakes 10-20% city-level courses, 30-40% district-level courses and 50% school-level training.14

Providers of professional learning
- Shanghai Municipal Education Commission, districts and schools
- Districts decide what professional learning curriculum teachers undertake, tailored to each subject.
- Universities offer in-service teacher development as do city and district education colleges.

**Program Descriptions**

### Mentoring
All teachers have mentors.
Observations are frequent (weekly).
Mentoring is an explicit part of teachers’ job description.
Master teachers mentor across many schools.

### Beginning teacher induction
A one-year intensive program with a final assessment is required to qualify as a teacher.
Beginning teachers are assigned two mentors on both subject and classroom management issues.

### Observation
Teachers are given frequent observation and feedback.
This includes pre- and post-meetings.
Observation takes place in mentoring, lesson groups, research groups, and demonstration classes.

### Lesson groups
Groups of 6-8 teachers do joint lesson planning.
They meet every 1-2 weeks for up to 2 hours.
This is expected in all schools.

### Research groups
Groups of teachers do practical research, observe new approaches and critique.
They meet every 1-2 weeks for up to 2 hours.
This is expected in all schools.

### Coaching and expert advice to schools
Frequent school visits, and teaching observations by
- Coaches and experts,
- Master teachers,
- Subject researches, and
- Academics.

These target specific teaching needs (e.g., pedagogy) as well as build capacity in professional learning (e.g., how to do research).

### Networks
Demonstration classes given across schools.
Teachers deliver seminars to others.
Teachers in high-performing schools mentor in low-performing schools.

### Seminars, workshops
District academics oversee and deliver training courses.

### Individual Study
Teachers are subsidized to undertake Masters study.
More senior teachers undertake independent practical research.
Box 1 Further Resources for Shanghai

*Education reform and strategy documents*

- Shanghai Twelfth Five-Year Plan Implementation
- Shanghai Guidelines for Professional Development for Teachers
- Beginning Teacher Training Program – Standardized Training Manual and Training Plan
- Sample Middle School – Beginning Teacher Mentoring Agreement
- Sample Shanghai Elementary School – Teacher’s Professional Development Record
- Individual Professional Learning Diagnosis Form

See ncee.org/BeyondPD for documentation

References for Appendix 4

2. OECD, 2013a
3. Statistics are for 2010, Shanghai Municipal Statistics Bureau (SMSB), 2011 cited in Zhang, Xu, & Sun, 2014
4. Statistics are for 2010, Shanghai Municipal Statistics Bureau (SMSB), 2011 cited in Zhang et al., 2014
6. Tan, 2013, pp. 111-113
7. Zhang, 2014, p. 18
8. Tucker, 2014
12. This has recently been increased from a 240 hour requirement over 3-5 years. Interview with Min Hang District, June 2014
14. Shanghai Twelfth Five-Year Plan
Appendix 5
Background Brief for Singapore
Background Brief for Singapore

Since Singapore became independent in 1965, its education system has developed into one of the best in the world. On the OECD’s PISA test, Singapore ranks 3rd in reading, 2nd in math, and 3rd in science.

Significant reforms began in 1998. The “Thinking Schools, Learning Nation” policy began a series of reforms aimed at fostering students’ creativity and innovation. Teacher career paths and incentives were changed and initial teacher education reformed. Continued investing in teachers has been a major driver of success, from recruiting and initial teacher education through to ongoing professional learning.

Policies introduced since the mid-2000s have made learning paths for both students and for teachers more holistic, active, and inquiry-based.

Singapore Education at a Glance

Demographics:
- Population 5.5 million, ethnically diverse with Chinese, Malay and Indian residents.

Size of school sector (2013):

<table>
<thead>
<tr>
<th></th>
<th>Schools</th>
<th>Students</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>182</td>
<td>236,862</td>
<td>14,442</td>
</tr>
<tr>
<td>Secondary</td>
<td>154</td>
<td>177,672</td>
<td>13,328</td>
</tr>
<tr>
<td>Junior college</td>
<td>14</td>
<td>21,564</td>
<td>2,041</td>
</tr>
<tr>
<td>Mixed level</td>
<td>15</td>
<td>37,577</td>
<td>2,968</td>
</tr>
</tbody>
</table>

Note: Secondary schools include 15 primary-secondary and secondary-junior colleges; junior colleges provide 2-3 years pre-university education.

Organization of schools:
- Education is mainly public.
- Government and government-aided schools charge nominal school fees as they are partially funded by government.
- Some schools have ‘autonomous’ and ‘independent’ status.
- Small number of private schools with no public funding.

Curriculum:
- National curriculum is set by the Ministry of Education. Each syllabus is reviewed on a 6-year cycle.
- Curriculum reviews since 1998 create time and space for learning activities that enhance students’ creativity and innovation, and allow for broader, more holistic learning and development.

Assessment:
- National assessments are set by the Singapore Examinations and Assessment Board to progress between stages of learning:
  - Primary School Leaving Exam
  - Secondary: General Certificates of Education
  - Pre-university: General Certificate of Education (advanced), International Baccalaureate, National University of Singapore High School Diploma
• Holistic assessment reform in 2009, to provide more comprehensive and formative assessment in primary schools.

Teaching in Singapore

Initial teacher education:
• Options include 4-year degree, 1-year postgraduate degree, or 2-year diploma
• Practicum of 10-15 weeks. All trainees do a practicum in their subject area.

Teacher specialization:
• Teachers specialize in two or more academic disciplines.
• Within the 4-year degree teachers acquire equivalent of an undergraduate degree in specialty.6

Selection into teaching:
• Top 30% of high school graduates7
• Applicants must clear an interview panel consisting of former or current principals and senior Ministry of Education officers.

Teaching in schools:
• Average 17 teaching hours a week8
• Average class size: 339

Schooling and Governance

Figure 11: Structure of schooling - Singapore

Teacher Professional Learning

Singapore has an integrated system of professional learning. Competency frameworks, professional development and performance appraisal are closely linked to progression along defined career tracks.

Singapore has a strong focus on collaborative professional learning. Mentoring takes place at all levels and all teachers participate in professional learning communities in schools. These communities use various critical inquiry methods such as lesson study, learning cycle and action research for teachers to research and plan lessons, analyzing the impact on student learning and reflecting on, and refining, their pedagogy.
The National Institute of Education (NIE) provides professional learning programs including higher degree programs, leadership programs and professional development programs and courses.

The Academy of Singapore Teachers (AST) leads the professional development of teachers in Singapore. It works with teacher academies and language institutes to provide programs and subject-specific communities of practice for teacher development.

Other academies and language centers also provide subject-specific professional learning programs for teachers. These include: English Language Institute of Singapore, Malay Language Centre of Singapore, Physical Education & Sports Teacher Academy, Singapore Centre for Chinese Language, Singapore Teachers’ Academy for the Arts (STAR), and the Umar Pulavar Tamil Language Centre.

Goals, Policies and Structures

Teaching development framework

• Values, Skills and Knowledge (V3SK) framework introduced in 2009.\textsuperscript{10}

• Values are divided into learner-centered values, teacher identity, and service to the profession and community.

• Values are overlaid with 21st Century Skills and knowledge (see Figure 13).

Continuing professional development

• The Teacher Growth Model\textsuperscript{11} is designed to encourage teachers to be responsible for ongoing professional learning.

• Model defines competencies and rating scales of increasing effectiveness across five desired outcomes, and recommends learning areas according to career stage.

• Individual learning is coordinated by school staff developers, and linked to career tracks.

Professional learning time expectations

• All teachers are entitled to 100 hours for professional learning each year.\textsuperscript{12}

• Schools must schedule at least 1 hour each week for professional learning communities.

Providers of professional learning

• Ministry of Education officers work with providers and schools as professional learning designers, consultants, and facilitators.

• Pre-service, Master’s, diploma and certificate programs are provided by the National Institute of Education (NIE).\textsuperscript{13}

• NIE, the Academy of Singapore Teachers (AST), and a consortium of academies and language centers provide professional development workshops and courses for teachers, teacher leaders, key personnel and school leaders.

• The AST and various academies and language centers coordinate and support learning communities of teachers within and across schools. They also put in place professional development courses and support for mentoring.\textsuperscript{14}

• Master teachers help develop and facilitate professional learning to implement curriculum revisions and to deepen teachers’ subject matter and pedagogical content knowledge. They also consciously grow the teacher leaders’ pipeline by working alongside and guiding the lead and senior teachers.
Figure 13: Values, Skills and Knowledge Framework (V3SK)

Box 4 Further Resources for Singapore

**Education reform and strategy documents**

- Ministry of Education system overview – ‘Education in Singapore’

**Professional learning strategies**

- National Institute of Education – Teacher Education Model for the 21st Century
- National Institute of Education – Holistic Assessment
- Academy of Singapore Teachers – Teacher Growth Model

**Professional learning resources**

- National Institute of Education – Teacher education programs
- Academy of Singapore Teachers – Professional development programs
- Academy of Singapore Teachers – Networked Learning Communities
- Academy of Singapore Teachers – Professional Learning Communities
- Academy of Singapore Teachers – Lesson Study cycle
Program Descriptions

Mentoring
Embedded in programs and role responsibilities across the profession. Beginning teachers receive school-based mentoring in the first two years of teaching. Teacher leaders (Lead and Senior Teachers) and School Staff Developers undergo professional development in coaching and mentoring. AST provides professional development courses for these teacher leaders in how to be an instructional mentor.

Beginning teacher induction
New teachers have structured support through a series of induction programs in their first two years. These programs include orientation, mentoring and foundational in-service courses. A Beginning Teachers’ Symposium where beginning teachers share their learning and experience rounds up the induction.

Coaching and expert advice to schools
Master teachers are available to all schools to coach teacher leaders, and provide pedagogical expertise. Ministry of Education officers and specialists help schools in many areas such as curriculum implementation, assessment, the use of ICT and teaching of Character and Citizenship Education, among others. Each school also has a dedicated School Staff Developer to coordinate learning and development needs.

Professional learning communities
All schools adopt (or are adopting) the professional learning community approach. All teachers are members of learning teams comprising small groups of teachers. The PLC framework engages teachers in cycles of inquiry focused on students and their learning. Teachers plan and research lessons, collect and analyse data on student progress, reflect on the impact of their teaching, and try new approaches.

Critical inquiry methods
Learning teams use various critical inquiry methods to help teachers work collaboratively in a group to research, plan, discuss, observe and refine lessons. These methods include lesson study, learning circle, learning study and action research.

Lesson observation
Lesson observation is conducted in formal mentoring programs for trainee and beginning teachers by instructional mentors, in individual performance appraisals by reporting officers and in professional learning teams by peers. It generally includes a pre-observation meeting to discuss lesson objectives, observation and post-lesson feedback. Generally, prescribed forms are used for performance-related observations.

Networks
AST and various academies and language centers support a number of networked learning communities or communities of practice that bring together teachers with shared subjects, common interests and similar roles (e.g., beginning teachers, senior teachers). They promote collaboration, peer support and sharing ideas, as well as providing targeted professional development.

Seminars, workshops
NIE and AST (with a consortium of academies and language centers) provide a catalogue of professional development courses and workshops for teachers and principals. These are linked to learning dimensions in the Teacher Growth Model.
References for Appendix 5

1. OECD, 2010c, p. 161
2. OECD, 2013a
3. OECD, 2010c
4. OECD, 2010c, p. 169
6. Interview with National Institute of Education and Ministry of Education, Jensen et al., 2012, p. 54
7. Interview with National Institute of Education and Ministry of Education, Jensen et al., 2012, p. 56
8. OECD, 2014, Table 6.12
Appendix 6
Summary of Evidence on Effective Professional Learning
Summary of Evidence on Effective Professional Learning

Features of effective teacher professional learning identified in this report are drawn from large-scale impact studies and meta-analyses undertaken in the last decade.

These reviews looked at rigorous studies that measured the impact of professional learning on both teacher knowledge and practice, and on student outcomes.

Several of the studies include conceptual models that outline the positive link between teacher learning and student achievement. For example, Yoon et al. summarize the link as follows:

Professional learning positively affects student achievement through three steps. First, professional learning and development enhances teacher knowledge and skills. Second, better knowledge and skills improve the level of classroom teaching. Third, improved teaching raises the level of student achievement. If one link is weak or missing, better student learning outcomes cannot be expected. If a teacher fails to apply new ideas from professional development to classroom instruction, for example, students will not benefit from the teacher’s learning.

The selected analyses are summarized in Table 1 (next page). Timperley’s analysis stands out in its approach. The team began by identifying 84 different characteristics of professional learning and development. They used these to probe the relationships between particular professional learning opportunities and their impact on teaching practice – that is, how teachers interpret the learning and use particular skills offered during professional learning opportunities. The team looked at the consequent impact of these on teaching practice and student outcomes.

In addition to the studies summaries below, Hattie’s synthesis of meta-analyses evaluates the effect that many facets of teaching have on student achievement, including how these relate to professional learning and improving teacher practice.

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Figure 14: How Professional Development Affects Student Achievement

Source: Yoon, Duncan, Lee, Scarloss, & Shapley, 2007
Table 1 Summary of Selected Professional Learning Studies

<table>
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<tbody>
<tr>
<td>Features</td>
<td>97 studies (of 217 identified) that met rigour requirements and had substantive student outcomes associated with PLD</td>
<td>Nine studies (of 1300 reviewed) that meet What Works Clearinghouse evidence standards. All focused on elementary schools.</td>
<td>Sixteen studies (of 416 reviewed) of PLD programs in math and science</td>
<td>Determines core features of effective PD through review of empirical impact studies</td>
<td>34 studies + review of meta-analyses that measured impact on teacher and/or student learning</td>
</tr>
<tr>
<td>Extended opportunities over a period of time (when combined with other effectiveness factors)</td>
<td>Commonly six months to 2 years. Typically occurred over an extended period of time and involved frequent contact. How time was used was more important than the exact nature of the PLD</td>
<td>More than 14 hours. (Average 49 hours) Generally, intensive PD events supported by follow-up sessions</td>
<td>Commonly six months or more, with mean contact time of 91 hours. Multiple activities to provide follow-up reinforcement of learning, assistance with implementation, and support for teachers in their schools</td>
<td>At least 20 hours per semester. Intellectual and pedagogical change requires substantial time: both span of time over which the activity is spread, and the number of hours spent in the activity.</td>
<td>Range from 14 – 80 hours. Single and short-term interventions less effective than long-term interventions combined with follow-up support.</td>
</tr>
<tr>
<td>Engaging teachers in real practice-related content</td>
<td>Integrating theory and practice is key, with clear links between teaching and learning. Programs included links between learning and teaching, differentiated approaches, content-specific instruction, and using curriculum materials.</td>
<td>Program designs included strong emphasis on teachers learning specific subject content as well as pedagogical content for how to teach it to students.</td>
<td>Activities that focus on subject matter content and how students learn that content is linked with improved teacher practices and increases in student achievement.</td>
<td>Intervention should be related to subject content, pedagogical content knowledge and student learning processes.</td>
<td>Cites reviewing student work in the topic areas being covered as an example of effective PD.</td>
</tr>
<tr>
<td>Focused on how to better support student learning</td>
<td>Student perspective is maintained in effective programs. Powerful outcomes arose when teachers accepted that their practice was not optimising students’ learning opportunities. Programs that focused mainly on teachers’ behaviors had less impact than those that focused on teachers’ knowledge of the subject, on the curriculum, or on how students learn the subject (citing Kennedy, 1998).</td>
<td>Cites reviewing student work in the topic areas being covered as an example of effective PD.</td>
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## Appendix 6: Summary of Evidence on Effective Professional Learning

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<tbody>
<tr>
<td>In collaboration with other teachers</td>
<td>Participation in a professional community that supported the new ideas and practice at the same time as it challenged existing ones and focused on teaching–learning links</td>
<td>Strong evidence linking impact to discussion with colleagues, observing other teachers and professional networks</td>
<td>Collective participation of teachers set up potential interaction and discourse which can be a powerful form of teacher learning.</td>
<td>Need permanent access to newly developed knowledge and expertise of colleagues within and beyond the teacher’s own school</td>
<td></td>
</tr>
<tr>
<td>Involving active inquiry, challenge and critique</td>
<td>Sustainability depended on teachers developing skills of inquiry to judge the impact of teaching on learning and to identify next steps.</td>
<td>Programs varied, but included teachers learning and practicing instructional behaviors, and developing learning cycles.</td>
<td>Strong evidence of programs with multiple professional development activities, and active learning methods that were used with teachers</td>
<td>Programs gave opportunities for teachers to engage in active learning including observing expert teachers and being observed, followed by interactive feedback and discussions.</td>
<td>Active learning is effective E.g. observing expert teachers, being observed with feedback, reviewing student work Inquiry-based elements include analyzing student data, and practice-related research activities.</td>
</tr>
<tr>
<td>With external input</td>
<td>New learning needs experts external to the group who could present new ideas in ways that promote teacher engagement.</td>
<td>Studies all featured programs that were delivered by external providers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coherence (with teachers conceptions, research, and policy)</td>
<td>Effective PLD is often consistent with current research findings, recommendations of professional bodies, and/or current policy.</td>
<td></td>
<td>Consistency of school, district and state reforms and policies with what is taught in PD is an important aspect of coherence.</td>
<td>Effective PLD is linked to ongoing innovations.</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Blank & de las Alas, 2009; Desimone, LM, 2009; Klaas, Zwart, & Meirink, 2012; Timperley, Wilson, Barrar, & Fung, 2007; Yoon et al., 2007

### References for Appendix 6

1. Yoon, Duncan, Lee, Scarloss, & Shapley, 2007
2. Timperley, Wilson, Barrar, & Fung, 2007
3. Hattie, 2009
Appendix 7
Professional Learning Communities in Singapore
Professional Learning Communities in Singapore

Background and Context

The Ministry of Education introduced professional learning communities in 2009 as a whole-school approach to enhance teacher professionalism. The aim was for teachers to take greater ownership of their professional development and lead curricular and pedagogical innovations.

All schools in Singapore are now part of the initiative. The Ministry of Education has extended collaborative teacher professional learning communities to across schools, clusters and zones.

Professional learning communities enable teachers to learn collaboratively in order to progressively improve the curriculum at the school level.1

Professional Learning Communities: Concept and Principles

The guiding principles of the professional learning communities model are called the ‘Three Big Ideas’.2 The focus of professional learning communities’ activities on student learning is directed by the ‘Four Critical Questions’.

Big idea #1. Ensuring students learn: Professional learning communities focus on the learning of each student. They ask, ‘what was learned?’ This is a shift away from the traditional perspective of asking ‘what was taught?’ Professional learning communities use the four critical questions to clarify exactly what each student must learn and consider how they can guide and monitor each student’s learning.

Four Critical Questions:

1. What is it we expect students to learn?
2. How will we know when they have learned it?
3. How will we respond when they do not learn?
4. How will we respond when they already know it?

These questions help the teachers to plan how to provide additional support, extension and enrichment for students when they need it.

Big idea #2. Building a culture of collaboration: School leaders and teachers work together to achieve their collective purpose of learning for all. Teachers in professional learning communities are mutually accountable for their students and work interdependently, creating a sense of shared purpose and collegiality.

Big idea #3. Focusing on student outcomes: Professional learning communities judge their effectiveness using evidence about student progress. Every learning team uses data to continually improve. They compare information about the outcomes of their teaching and identify areas that are hindering or enabling student learning. The data allows teachers to employ appropriate and timely intervention strategies.

The learning circle process is one tool to work through the Four Critical Questions in a cycle of improvement. Other methods include action research, lesson study and learning study. Through the process, they will develop lesson plans and materials, research teaching strategies and assessment practices, try new approaches, and gather evidence about what has worked.

Learning Circle Process in Singapore

The learning circle process is one tool to work through the Four Critical Questions in a cycle of improvement. Other methods include action research, lesson study and learning study.

A learning circle goes through the Scan, Plan, Act, Observe and Review (SPAR) cycle adapted from Kemmis and McTaggart (1988), which is built on critical reflection and dialogue.

Scan → Plan → Act → Observe → Review
Scan: Team members reflect on an issue and develop a group area of concern and research questions to explore the issue.

Plan: The team conducts a literature review related to the focus area and identifies a SMART outcome they want to achieve from the cycle. They will discuss strategies that they would like to implement and decide on the methods they will use to collect data.

Act: The team draws up an action plan and timeline and allocates roles for different stages of the project.

Observe: Teachers collect and analyze data as they implement the chosen strategies in class.

Review: The teams reflect individually and as a group on the strategies that have been implemented, their effectiveness, and the learning that has taken place.

Implementation

To support the system-wide implementation of the professional learning communities model, the Ministry of Education provided training for learning community facilitators, as well as extra funding for teacher professional learning, and additional time (about an hour each week).

Each school also received a professional learning community starter kit – a framework of tools and templates to establish the model. The kit details several roles for school leaders including

- Prioritizing staff professional development,
- Developing and communicating a shared vision on professional learning communities,
- Building staff commitment (fostering trust, collaboration and ownership, building

Box 5 Professional Learning Communities - The Hybrid Model in Singapore

The Ministry of Education model of professional learning communities combines features of western models described by DuFour and Fullan. DuFour’s view is that the only purpose for teacher collaboration is to improve in student outcomes. Professional learning communities are a means to have purposeful, focused discussions about how to lift achievement and to reach agreement about what approaches to take.

Fullan sees professional learning communities as a process for building teacher efficacy. The focus is on teachers continually challenging each other’s practices rather than reaching consensus. This generates incremental and qualitative improvements to teaching practices over time which impact student learning.

The professional learning communities model supports consensus-building within schools with a strong focus on improving student learning. However, school leaders have autonomy over the implementation in their school.

<table>
<thead>
<tr>
<th>Fullan</th>
<th>Dufour</th>
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<tr>
<td>AST</td>
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<tr>
<td>Reflection</td>
<td>Treatment of Conflict</td>
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<tr>
<td>Collaboration</td>
<td>Opportunity for coming to consensus on professional standards</td>
</tr>
<tr>
<td>Opportunity for professional cross fertilization of diverse opinions</td>
<td>Reflection ought to be anchored upon tangible returns, such as student outcomes</td>
</tr>
<tr>
<td>Although tangible outcomes are essential, need to venture into intangibles for deep and sustainable reform</td>
<td>Strong standardization drive</td>
</tr>
</tbody>
</table>
Appendix 7: Professional Learning Communities in Singapore

A learning culture, handling resistance, balancing creativity and autonomy within parameters and boundaries),

- Role modelling commitment to professional learning communities,
- Optimizing organizational structures and processes, leveraging existing structures,
- Providing training and resources with tools and templates,
- Mentoring, recognizing, affirming and celebrating professional learning community activities, and
- Leveraging the notion of professional learning communities to enhance professional development as a whole.

The ‘3Rs’ Approach

The Academy of Singapore Teachers supports schools with learning communities through its ‘3Rs’ approach:

**OutReach:** for schools newly on-board, the Academy conducts induction workshops for members of the coalition team. This team comprises principals, vice principals, school staff developers and heads of departments. The coalition team forms professional learning teams in their schools and sets directions for them, and the Academy provides consultancy support on request. The Academy also runs workshops to equip professional learning team leaders with facilitation skills, and includes professional learning communities in formal programs for school staff developers and senior teachers.

**Resource:** The Academy provides a toolkit to help schools establish professional learning communities in their schools (explained above). The Academy also maintains an intranet for professional learning communities including suitable templates, sharing by schools, and training videos that cover essential skills such as how to run an effective professional learning team.

**Research:** The Academy has completed ‘research projects’ on professional learning communities, and conducted sharing sessions with participating schools to help them distill key findings.

Building Up Skills to Actively Engage in Learning Communities

Teachers’ research skills may need to be built up before professional learning communities can be successfully implemented. Not every teacher will know how to set a good research question, use data effectively to draw inferences, or how to write up research findings.

Singapore’s reform history in this area provides a good example for other systems wanting to improve teachers’ critical inquiry skills. In mid-2000s, to help build teachers’ critical inquiry skills, Singapore provided professional development to at least one teacher in every school to undertake evidence-based research. These research-trained teachers, or Research Activists, would lead classroom- or school-based research in their respective schools and share and develop research skills of their colleagues. The program required these Research Activists to commit two days per week on attending professional development courses related to action research, and planning, design, facilitating and conducting action research in their schools. This program lasted four phases from 2005 to 2009.

After developing a core pool of Research Activists, Singapore has since gone on to explore and encourage other critical inquiry methods including lesson study, learning study and learning circle for the teaching fraternity. The Academy of Singapore Teachers has created a Research Professional Learning Roadmap, which includes a series of research courses to build teacher research skills.
Figure 15: Research Professional Learning Roadmap in Action Research, Singapore

R4E101
Demystifying Research
Aims to provide teachers with an understanding of the fundamental ideas of research. Designed to support teachers’ initiation into basic research. Through this, we hope to help teachers see that research is integral to enhancing one’s professional practice.

R4E201
Conceptualizing Research
Mounted to equip teachers with essential knowledge in Action Research (AR), which is a common research methodology in the classroom context. Designed to support professional learning community learning teams in crafting and planning a research proposal.

R4E301
Conducting Research
Designed to empower teachers with the essential skills in AR to conduct practice-based research. Designed to guide learning teams to collaboratively implement their research proposals.

Source: Academy of Singapore Teachers, 2012c

Box 6 Case Study - Improvement Framework in Action at a Singapore Primary School

One Singapore Primary School has adopted a whole-school professional learning communities approach, where teachers work in professional learning teams, supported by heads of department. School leaders carried out a strategic review of the school from which they determined that assessment for learning and teaching would be the focus of a two-year professional learning communities project throughout the school.

Teachers in their professional learning teams choose the subject and grade level they wish to work on. Time and space is structured to have their regular team meeting. They used the Learning Circle method to introduce and research on new assessment practices.

Each professional learning team discussed how they currently carried out assessment and feedback in class and gathered information about how students responded to this. Teams used the research materials from the Ministry’s holistic assessment initiative. Teams compared their current practices with the goals of the initiative and discussed what changes they needed to make.

Individual teachers introduced changes in their own classes, and collected evidence from class discussions and student work on what the students understood and have done. Teacher members in their respective professional learning teams would observe the lessons and discuss what had worked well and what are the areas for refinement.

Regular, whole-school Timetabled Teacher Training (TTT) sessions were used for professional sharing and curriculum reviews. Each team presented their findings at the sharing session at the end of the year so that effective ideas were shared with other colleagues in the school.

Source: School visit, August 2014
References for Appendix 7

1. Hairon & Dimmock, 2012


3. Interview with Academy of Singapore Teachers, August 2014, Academy of Singapore Teachers, 2012b, Kemmis & McTaggart, 1988

4. Where SMART goals are Specific, Measurable, Attainable, Relevant and Time-bound.

5. Hairon & Dimmock, 2012

6. Information provided by the Academy of Singapore Teachers

7. The Academy worked closely with the Office of Education Research and National Institute of Education in this.

8. Academy of Singapore Teachers, 2012c
Appendix 8
Learning Communities in British Columbia
Learning Communities in British Columbia

The collaborative inquiry approach in British Columbia began in 1999, started by the Ministry of Education in partnership with two key educators – Linda Kaser and Judy Halbert. The original goal was to engage schools in the implementation of newly established student Performance Standards by bringing schools together in an inquiry-based network.¹ These voluntary, cross-district groups became the Networks of Inquiry and Innovation (NOII) and now use the Spiral of Inquiry approach to provide a structure for teachers to collaborate across British Columbia. Based on the success of the Networks of Inquiry and Innovation, the networked strategy was expanded with support from the Ministry in 2006 and 2008. Around 44 districts (out of 60) have been active members with more than 500 schools involved since the networks’ inception.²

Box 7 Evidence of Effective Learning Communities

Effective learning communities come together for a specific purpose: to improve student learning by improving teacher practice. It is critical to have a clear goal around student achievement to enhance the alignment of the teachers. In British Columbia, the shared vision is: Every learner crossing the stage with dignity, purpose, and options.

Learning communities and networks should also have a structure that builds knowledge through teacher inquiry and that benefits from interdependent teaching roles to encourage shared responsibility for student learning.³ Communities should prioritize evidence collection for reflection so bad practices are not reinforced — positive results only happen when evidence of an impact on student performance is stressed.⁴ Finally, trust is a critical part of effective learning communities and can be one of the strongest facilitators of collaboration.⁵

The main elements of effective learning communities (and the reasons they are important) are listed below⁶:

1. Focus and purpose: communities must have a focus that is compelling and challenging.

2. Shared values and vision: communities should have an end goal of student learning, but also a short-term goal of answering a question shared by the whole team.

3. Evidence collection: formative assessment practices should be integrated in the work to encourage reflection on student performance data.

4. Relationships: positive relationships create alignment, trust, and support.

5. Collaboration: team members must have their beliefs challenged, hear ideas from others, get productive feedback, and share knowledge.

6. Inquiry: groups should question current practices, examine new ideas, try them out, get feedback, and reflect on results.

7. Leadership: learning communities work well with distributed leadership, with formal and informal leaders moving the work forward. Emphasis on peer support rather than leadership by supervisors.

8. Accountability: internal and external accountability is important – learning communities should be able to show policymakers what results are coming and have a belief in transparency and sharing.
Beyond PD: Teacher Professional Learning in High-Performing Systems

The model is also now being used for within-school learning communities comprised of teams of teachers with the support of their principals and districts. Linda Kaser and Judy Halbert still play a key role in championing the inquiry-based approach more broadly in British Columbia. The pair acts as a central organizing hub for the cross-district networks by communicating regularly with regional leaders and by promoting the networks through professional connections and social media.

Spiral of Inquiry

The Spiral of Inquiry provides a clear framework within which teachers can address key areas of student learning. The Spiral steps were developed from the work of Helen Timperley, Linda Kaser, and Judy Halbert.

Figure 16: The Spiral of Inquiry

Source: Timperley, Kaser, Halbert, & Centre for Strategic Education (Vic.), 2014

1. Scanning: what is going on for learners?

This first stage involves collecting a variety of evidence via formative assessment, observations, and conversations with other teachers. This process can take one-to-three months.

2. Focusing: where are we going to place our attention?

There may be many potential questions that come out of evidence from the scanning phase, so groups will need time to decide on their focus – where is the biggest priority area of student learning that should receive critical attention?

3. Developing a hunch: what is leading to this situation and how are we contributing to it?

The hunch stage gives teams an opportunity to share their perspectives on possible causes of the student learning issue. It is important that the teams focus on what is within their locus of control (e.g., not on blaming parents). This stage requires a lot of trust in teams because teachers will be looking critically at their practice and sharing their observations.

4. New professional learning: how and where will we learn more about what to do?

Here, teams will decide what they need to learn and how they will accomplish the learning. It is important that teams have the capacity to draw on strong research, so this is a time when leadership or outside consultants can help and provide resources.

5. Taking action: what will we do differently?

In this stage, teachers work together to apply what they have learned. Taking action involves multiple attempts at changing practice, and it is important that teams support each other with observation, feedback, co-teaching, discussion and other collaborative structures. Teachers need multiple opportunities to try new strategies before they are proficient, so the team is critical to provide support to encourage persistence.

6. Checking: have we made a big enough difference?

Teams should agree ahead of time on the evidence that they will use to see if their new strategies are
working, and use this stage to check that evidence through formative assessment.

See the Toolkit for more resources related to the Spiral of Inquiry.

Principles of Learning

The Spiral of Inquiry method is grounded in emerging knowledge from the learning sciences, summarized in an OECD report, *The Nature of Learning*. The seven principles of learning are:

1. Learners at the center
2. Social nature of learning
3. Emotions are integral to learning
4. Recognizing individual differences
5. Stretching all students
6. Assessment for learning
7. Building horizontal connections

Example Teacher Inquiry Questions

In many schools, teachers participate in learning communities that are structured around the Spiral of Inquiry method. Each teacher group chooses an inquiry question that guides their professional learning for most of the year.

Below are some example inquiry questions from schools:

- To what extent will the use of a systemic intervention program in early numeracy and the embedding of [Assessment for Learning] practices improve achievement for students struggling in math?

- To what extent will embedding ‘A Novel Approach’ structure and [assessment for learning] practices improve understanding of a Big Idea/Theme, writing of a powerful response and ownership in reading and writing?

- How do formative assessment practices that include portfolios and descriptive feedback improve student performance on final written tasks?

- How will a Sport Education (SE) model of instruction that utilizes digital technology enhance student enjoyment, participation levels and motivation in physical education?

- How does framing instruction around essential questions help students become more active, probing, and determined inquirers?

'It’s all about learning' has become an unofficial motto, referring to the learning of children as well as the adults. Learning is revered and celebrated. Relationships between staff have strengthened and seeing [the inquiry teams’] success is really motivating.’

- Principal, Hillcrest Elementary School

Support for Collaborative Groups

What helps school-based collaborative inquiry groups to flourish? A key feature is the leadership role that select teachers in schools take on to help lead collaborative teams in the school. In addition, some districts have dedicated personnel employed to work across schools to help guide collaborative groups (called ‘consultants’ or ‘helpers’). These helpers bring in professional learning resources, help teachers select a targeted inquiry question, provide sample lessons, and provide feedback through co-teaching or lesson observation. Many districts support inquiry groups by offering small grants (usually between CAD $1,000 - $3,500) which teams use to pay for release time for meetings or resources for their professional learning.

Example Elementary School in the Delta School District

The principal of one B.C. elementary started teacher inquiry groups with the goal of connecting everyone across the school. During the first year,
the inquiry groups centered on improving student learning in social responsibility, a topic most teachers felt comfortable with and interested in. The principal divided the school into teams, each focused on one inquiry question over sixteen weeks. These teams included teachers from multiple grade levels to encourage wider information sharing.

In the second year, after teachers were familiar with the inquiry process, the school moved the focus to math – a significantly harder topic for most teachers. The school selected a math inquiry question after reviewing evidence on student learning. The staff had noticed increasing numbers of students with difficulties in number sense and operations, and teachers were wrestling with how to successfully support diverse learners in these areas. The principal also noticed that teachers were less comfortable sharing information about their practices in math with colleagues, so the teams were changed to be within the same grade level.

Every school in the district selects a teacher to serve as the coordinator of inquiry, and this sample school’s coordinator helps teachers with math content as well as moving their inquiry work forward. A large part of the coordinator’s job is modelling the inquiry process and facilitating inquiry group meetings. Inquiry teams sign up for meeting time on Tuesday afternoons from 1-3pm. The principal and school librarian often take over teachers’ classrooms when they need to meet, but they are always looking for more money to fund release time for teachers through applications to the district inquiry grants each year.

The school-wide math inquiry question was displayed in the front office and in different areas in the school to communicate the focus. The principal at this sample school also built a partnership with another district school facing similar challenges, and the inquiry groups in each school visit each other as part of their professional learning. The success of the math inquiry will be measured through the B.C. Numeracy Performance Standards and other assessments used in the school, along with evidence from student math portfolios.\(^{16}\)

**Example Elementary School**

The principal from this sample elementary school started inquiry groups at her school by offering lunch sessions to introduce formative assessment and by placing related books in teacher mailboxes. She found common issues among staff and offered formative assessment as a helpful practice to combat those issues. Interested teachers began working together in teams to implement formative assessment practices, and a common language and approach emerged that could be used across all subjects and grade levels. While there is no requirement at this sample school that teachers participate in inquiry groups or in formative assessment, the principal has made it clear the work aligns with her vision.

The district employs full-time teacher leaders called helping teachers, and this sample school works closely with them. The school also received CAD $2,000 in 2013 from the district as part of the district’s Innovative Learning Grant program which funds inquiry projects.

On Fridays, once per month, teachers have forty-five minutes of time to meet with other teachers for inquiry. They also combine classes to make more time or use personal time for the work. Teachers acknowledge that they felt vulnerable sharing their practice with others at first, but seeing other teachers’ success was really motivating. Staff join inquiry groups at different times but are encouraged by the collegial nature of the groups. One teacher explained why she decided to join a team, ‘You want to be part of this group that is having fun.’

Teachers at this sample school believe that it is important to share their work, and most teachers have done presentations on their inquiry and formative assessment at the district. The principal also gives teachers opportunities to present to different schools and districts. Teachers receive a half-day of release time to prepare for any formal workshops and participating in sharing can help with their career progression.
Cross-District Networks

Some inquiry groups share findings with other teachers across the whole province. Since 2000, upwards of five hundred schools have participated in networks, such as the Networks of Inquiry and Innovation, which bring teachers and school administrators together from across British Columbia. Schools participate in the networks voluntarily, and they use the Spiral of Inquiry method to provide a structure to collaborate on improving the quality and equity of education across the province. Some networks have specific topics, such as the Aboriginal Enhancement Schools Network (focusing on Aboriginal student learning) or the Healthy Schools Network (focusing on student health and well-being).

The majority of network participants are teachers, but each team has at least one formal school leader (principal or vice principal), and support staff are also welcome to participate. School teams create an inquiry question and meet with the network after-school three times during the year to share strategies from their inquiry and what they have learned.

Each school is asked to write a short case study of their inquiry at the end of the year. Schools receive a small grant (CAD $300-$1,000) for participation which is used to purchase resources, fund release time, or pay for travel to meetings.

Effects in British Columbia

The cross-district networks have created some shared values and frameworks that are now common throughout the province. The network participants developed shared goals for their work which have transcended the networks and are now in many district plans and in the current provincial education plan. The Spiral of Inquiry structure used in the cross-district networks is now commonly used in within-school learning communities and increasingly by schools and districts in their annual plans. Many school districts (60 percent) are involved directly in specific leadership development based on the Spiral of Inquiry method.

Cross-District Network History

The Networks of Inquiry and Innovation started by inviting schools near the Vancouver area to participate in conversations about the B.C. Performance Standards. The schools were required to meet three times throughout the year and develop an inquiry question related to engaging with the Performance Standards. At the end of the year, schools were asked to write up a case study of how their strategy worked in their schools, including the evidence they used to judge whether or not it was successful. Each school was offered CAD $1,000 to participate – given to them at the end of completion of the case study. Thirty-four schools from nine districts came to the first meetings, and they had a celebration at the end where case studies were shared. After the first year, interest in the networks grew, and schools joined from all across the province. Initial involvement of schools varied – sometimes it was interested individual teacher leaders, sometimes it was entire departments, and sometimes it was whole schools.

Box 8 Shared Network Goals

- Every learner crossing the stage with dignity, purpose and options.
- All learners leaving our settings more curious than when they arrived.
- Every learner has an understanding of and respect for Aboriginal culture, history and ways of knowing.

Source: Networks of Inquiry and Innovation, n.d.
Timeline of events

- 2000 – Networks of Performance Based Schools Launched (NPBS) (now known as NOII)
- 2006 – Health educators create Healthy Schools Network (HSN)
- 2008 – Aboriginal Enhancement Schools Network launched (AESPN)
- In 2013/14 – AESN had more than 100 schools and 700 support workers
- 2012 – NPBS changes its name to Networks of Inquiry and Innovation (NOII)
- 2013 – Largest new network is Creating Results for Young Readers (CR4YR)
- CR4YR is a provincially-supported literacy and inquiry initiative that has teachers throughout the province engaged in case study investigations into learning and teaching practices focused on vulnerable early learners. By the spring of 2014, 100 inquiry facilitators and more than 600 primary and support teachers in 200 schools were involved in this networked community.

Funding

The Ministry has provided a small amount of funding for Networks of Inquiry and Innovation since its inception. The program has been highly effective with relatively small amounts of funding (in comparison to the cost of many other professional learning initiatives around the world) – a real benefit of the program. For example, in 2013-2014, the combined funding for the Networks of Inquiry and Innovation and the Aboriginal Enhancement Schools Network was CAD $110,000. Some school districts provide matched grants, and book sales from Spirals of Inquiry: for equity and quality (a book written by Linda Kaser and Judy Halbert) have also contributed to the networks.

Example of Cross-District Inquiry from a Sample Elementary School, Networks for Inquiry and Innovation:

Inquiry question: If our Aboriginal learners learn how to self-regulate through the Zones of Regulation Program, and are offered a multitude of strategies and tools to help them cope with stressors, will their ability to learn improve?

Scanning:
- Students are struggling with attention
- Lack of focus in the classroom
- Difficulties with transitions and routines
- Confrontations with peers

Focusing:
- If our Aboriginal learners learn how to self-regulate, use strategies and tools, and remove stressors – will their ability to learn improve?

Developing a Hunch:
- What is working: lessons are high interest; there is a mix of hands-on, visual and oral learning, technology is integrated, and more than one style of teaching is being offered.
- What is not working: students are getting frustrated with work and with each other. Their work is not being completed in class, and students are wandering in class and using excuses not to work.

New Professional Learning:
- Read and studied Calm Alert and Learning – Stuart Shanker
- Teachers worked with Stuart Shanker and team for a year and a half
- Researched Zones of Regulation – Leah M. Kuypers
- Piloted Zones program in 2013
Taking Action:
- Self-regulation survey was given to each student
- Zones of Regulation taught twice a week in the classroom
- Integrated iPads for self-regulation and learning in the classroom
- Class piloted district stability ball project
- Offered a wide array of tools and resources for the classroom

Checking:
- Exit survey done with each student
- Students output of work has improved
- Students are able to choose strategies in class to stay calm, alert and ready to learn
- When outbursts happen, students self-regulate quicker

- Students find it easier to transition from subject to subject
- Students demonstrate more success with following routines
- Peer relationships have improved in the classroom and out of the classroom

Reflection and Questions:
1. Flexibility vs. Control: How much flexibility should we give? Is too much a possible roadblock?
2. Equality vs. Equity: How do we effectively teach students that when we give students what they need this may not be what is fair to all?
3. Opportunities: How many chances do you give students to retry tools once they have been taken away because of ineffectiveness?

Box 9 Learning Communities in British Columbia — Further Resources
For further resources on how learning communities operate and are integrated into school planning, see the following guides and case studies:
- Spiral of Inquiry book
- Sample Secondary School ‘Where have we been?’ document
- Sample Elementary School Learning Plan 2013/2014
- Cases from Networks of Inquiry and Innovation and Aboriginal Enhancement Schools Network (online link)

Softcopy of resources available in the Toolkit at www.ncee.org/BeyondPD
References for Appendix 8

1. The Performance Standards, released by the Ministry in 1999, give examples of student learning progressions in each subject so that teachers have a rubric to guide their classroom assessment. The standards are optional for schools to use, so the Ministry encouraged their adoption by funding the collaborative inquiry approach.

2. Halbert & Kaser, 2013b, p. 8

3. Louis & others, 1994, p. 37


8. Timperley, Kaser, Halbert, & Centre for Strategic Education (Vic.), 2014

9. OECD, 2012

10. Sample B.C. Elementary School, 2013. A full copy of the school's learning plan is available at www.ncee.org/BeyondPD


12. Sample B.C. Secondary 2010-2011 [link to Toolkit on NCEE website]

13. Sample B.C. Secondary 2012-2013 [link to Toolkit on NCEE website]


15. Interview with elementary school principal and teachers, September 2014, Sample B.C. Elementary School, 2013, p. 1


17. Halbert & Kaser, 2013b, p. 8


19. Personal communication with Linda Kaser and Judy Halbert, 29 October 2014


24. Halbert, Kaser, & Koehn, 2011, p. 8

25. Kaser & Halbert, 2014

Appendix 9
Research and Lesson Planning Groups in Shanghai
Appendix 9: Research and Lesson Planning Groups in Shanghai

Research and Lesson Planning Groups in Shanghai

Shanghai – Research and Lesson Groups

Shanghai (and China more broadly) has a long tradition of teachers working together to improve their teaching. Research groups and smaller lesson groups began in the 1950s to get teachers to meet frequently to explore teaching and pedagogy and translate research into teaching practice.

In both groups, teachers learn to gather high quality data and draw conclusions about student learning.

Shanghai Research Groups

Research groups are learning communities for teachers to research their professional practice. Teachers from the same subject area in the same school meet regularly to explore teaching issues. The groups explore teaching and pedagogical theory for application in the classroom.

Schools encourage teachers to take teaching-research activities seriously. Time is set aside in the schedule for group activities, and group leaders are paid extra for their role. Lesson plans, teaching materials and research findings are uploaded online for all teachers to access. When principals carry out performance appraisals, they consider each teacher’s contribution to research group activities, as well as the achievements of the group as a whole.

‘[In my group meeting] this Monday we watched a model lesson on the computer through the satellite...After watching this class, I was made to realize the gap between my own level of teaching and the level of this teacher’s teaching. All of the teachers [in the school] come to watch. We take notes and then after we finish watching we discuss our understandings.’

- 2nd-grade math teacher

Teachers have up to two hours each week of scheduled meeting time. Teachers have offices for their research, and there is physical space available to collaborate with colleagues. Each research group has a leader who directs group activities and coaches the novice teachers in the group. The group chooses a pedagogical issue as their research focus over a semester. Teachers read and discuss literature and hold forums with university experts and retired master-teachers. They use their findings to plan and deliver lessons. The group then evaluates the effectiveness of the lessons together.

‘Chinese language teachers from four schools all prepare the same unit according to their teaching philosophy and approaches. They then deliver the unit in their own way, critique each other and share learnings. The clashes and dissonance of educational ideas and teaching strategies among different teachers lead to in-depth reflection, knowledge sharing and mutual growth.’

Research groups have the autonomy to select what topic to explore. The group leader may select the focus based on the interests of the group members. Everyone is expected to read professional publications and books on teaching theory as well as research published by other teachers. As the group members all teach the same subject, they can investigate subject-specific teaching methods in depth.

The objective is for the groups to apply this research to their teaching by experimenting with new approaches in lessons. The teachers then generate new research by evaluating and writing up the impact of what they have done in class. During this process, the groups work together on lesson planning, observation and analysis.

Research groups of various schools in the same district often come together to be trained, to plan programs together and exchange ideas. Networks of schools work together to share resources on high quality research as well as coordinate training on common issues and needs.

High-performing schools in these networks share research resources with other schools to help raise the quality of research-oriented teaching. One
school typically leads the research union and coordinates research-based training activities for other schools.\textsuperscript{9}

There are also research functions at district and municipal government levels that conduct their own research and publish and promote school-level research across the system. Research institutes and universities determine research topics for selected schools to conduct and provide experts to lead collaborative projects.\textsuperscript{10}

**Formal Research Papers**

Research groups produce formal research papers, often shared with other schools. The papers provide an opportunity for group members to consolidate what they have learned, further developing their competencies as action-researchers. The very act of writing up their research helps teachers to rethink their methods and change their practice. They document the development of their ideas, their experiences, and changes in their beliefs regarding teaching and learning.\textsuperscript{11} Producing these teacher publications is viewed as a high-order teaching inquiry activity as it involves serious pedagogical research and teaching experiments.\textsuperscript{12}

School leaders promote the research findings and help groups to publish their papers in school, district and national journals. Principals give teachers financial incentives, offer suggestions to improve the quality of their research article, provide information about appropriate publishers, and develop school-based book collections for teachers.\textsuperscript{13}

Publication of research helps to build the status of teachers as researchers. Having a proven publication record is important for career advancement. It is even a requirement for appointment to senior teaching positions.\textsuperscript{14} Exemplary teachers are invited to present research reports and deliver open lessons at the district level.\textsuperscript{15}

**Case-study: Research Groups at a Sample Middle School**

Research groups at this sample Shanghai middle school meet for 1.5 hours every two weeks. The group sets an annual research question based on learning in the school. Members spend the first two months undertaking a literature review and ten months trying out new practice based on what they learn from their research. Master and advanced teachers lead less experienced teachers through the process.\textsuperscript{16}

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\textbf{Figure 17: Research Group Cycle in Shanghai}

- Select research topic on subject specific pedagogy
- Conduct research, reviewing literature and evidence
- Peer observation and feedback cycle to continuously refine
- Implement new pedagogy
- Write up, publish and disseminate findings

\textit{Subject specific}

\textit{Meet for up to 2 hours per week}

\textit{Led by a senior teacher}

\textit{Research process time = 1 year}
Joint Lesson Planning Activities

Shanghai Lesson Groups

Lesson groups involve teachers of the same subject and same grade level (e.g., 8th grade math teachers). They are typically smaller versions of research groups. Group members work together to plan lessons, examine student progress, and devise upcoming teaching content. Teachers discuss alternative teaching approaches, observe each other’s classes, re-examine content, and identify and solve problems in teaching the content.

Groups can pool resources in lesson planning to reduce individual teacher workload and free up time for reflection and discussion on learning. They allow teachers to develop the effectiveness and quality of their teaching, share ideas and experiences, and develop their thinking. Lesson planning groups produce teaching materials and resources that are shared across the school.

In the Huang Pu District, lesson planning groups work together to develop a teaching plan for the semester for their subject area. The groups discuss key questions and challenges in teaching the subject and then develop classroom-based approaches to address these. The group meets five times a semester in addition to observing each other’s lessons. Together they reflect on how lessons can be improved to better meet each student’s needs. Teachers benefit from each other’s experiences when they come across problems in designing lessons.

‘Every week, for two hours, teachers teaching the same subject will come together to discuss, share good ideas, their problems. This allows the teachers to prepare lessons in a more in-depth manner...The teacher training college in the county will also bring the teachers together to learn and exchange ideas. We organize teacher essay competitions, lesson plan competitions, and classroom activities’.

– Interview with senior teacher in a rural school

Box 10 Research as Teacher Development Mentoring

The Chinese term for ‘research-training’ [yanxiu] comprises two characters that mean ‘research’ [yan] and ‘improvement’ [xiu]. Together, they signify not just ‘training’ but training that is research-centered for the purpose of teacher improvement.

Practice-based research is promoted across the school system. There is a municipal teaching-research office, and similar offices in district teacher training colleges. Schools have teaching-research departments that coordinate teacher professional learning groups.

The aim is to support teaching as a research- and reflection-based profession. Teachers work with colleagues and experts to research effective learning and teaching. They observe, analyze and learn from each other to develop their practice.

Sources: Tan, 2013, Gu & Wang, 2006, Sargent & Hannum, 2009

Box 11 Key Benefits of the Research Team Approach External

- A profession that learns together and supports each other to develop their teaching
- Teaching practice that is based on contemporary, school-based evidence of what works
- A deeper understanding of discipline-specific learning and teaching
- A growing evidence-base that links pedagogical theory to practice and teachers’ experiences, and that is shared and promoted across the system.

Appendix 9: Research and Lesson Planning Groups in Shanghai
Traditionally, lesson planning and delivery were viewed as separate exercises. Now, learning groups watch lessons as they take place. They collect information about the actual outcomes of lessons, and assess the impact of the lesson on students’ knowledge and understanding. This combined process helps teachers to review and improve lesson planning and delivery, based on analysis of what actually happened in the class.²⁰

Box 12 Key Benefits of a Shared Approach to Lesson Planning and Evaluation

- Pooling of effort and resources, reducing individual teacher workload and allowing more time to be focused on effective teaching and practice development
- Deliberate and collaborative effort to solve problems in teaching lesson content, to design effective approaches, and to analyze their effectiveness
- Exposure to other teachers’ ideas and approaches and the opportunity to see and discuss how these are used in practice
- Providing structure for constructive and evidence-based feedback that is used to improve individual teaching practice
- A reduction in inequality within the classroom due to rapid diagnosis and response to individual learning needs.

References for Appendix 9

1. There are many variations in how research groups practice in different schools and districts. These depend on the size, location and resources of the school. In particular, practices in rural schools may lag behind urban schools. However, professional culture across the education system is characterized by a collective responsibility for learning and improvement, and is actively fostered by government policy.

2. Tan, 2013, p. 187

3. Tan, 2013, pp. 204, 218, Sargent & Hannum, 2009

4. Sargent & Hannum, 2009


7. Jensen et al., 2012

8. Jensen et al., 2012

9. Jensen et al., 2012

10. Wong, 2014, p. 81


12. Ng and Chow, 1999 in Wong, 2014, p. 81

13. Wong, 2014, p. 81

14. Wong, 2014, p. 79

15. Jensen et al., 2012

16. Jensen et al., 2012

17. Jensen et al., 2012

18. Sargent & Hannum, 2009

19. Tan, 2013, p. 71

20. Tan, 2013
Appendix 10
Collaborative Lesson Planning in Hong Kong
Collaborative Lesson Planning in Hong Kong

Collaborative lesson planning was introduced in Hong Kong as part of Learning for Life education reforms. Schools and teachers were encouraged to use collaborative lesson planning as part of school-based curriculum development. Initially, this began in primary schools then flowed through to secondary schools as curriculum changes were introduced. Teachers of the same subject and grade level work together to plan lessons – teachers are scheduled to have a common free period once per week (or cycle).

Typically, lesson planning is centered on:

- Sequencing of the lesson within curriculum
- Learning objectives for the lessons
- Pedagogy – common mistakes made by students, overcoming learning difficulties, learning activities used including games, worksheets, IT, enrichment activities
- Resources – development and design of resources including worksheets
- Assessment – setting classroom tasks and homework, setting assessments and assessment for learning, exam preparation

Collaborative lesson planning is also supported by the Education Bureau’s School-Based Support Services (SBSS) where Education Bureau staff provide on-site support for collaborative lesson planning.

Introducing collaborative lesson planning has been a developmental process. Teachers commented that when collaborative lesson planning was introduced, teachers were not sure what to do. Initially, teachers used the meetings for administrative purposes. However, the school reinforced the message that the time was to be used for lesson preparation. Over time, teachers began to discuss curriculum, lesson plans, pedagogy, assessment, and student learning difficulties and to exchange ideas.

Figure 18: Developmental Process in Lesson Planning: initial, Developing, Mastery Stages

<table>
<thead>
<tr>
<th>Initial Stage</th>
<th>What to do – content</th>
<th>How to do – collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review teaching schedule and general teaching situation</td>
<td>Refer to textbook and other learning materials for suitable teaching content, decide what to include and what to bridge</td>
<td>Build up consensus on the goals and objectives and the mode of collaboration</td>
</tr>
<tr>
<td></td>
<td>Negotiate homework and assignments: frequency, scope and mode of assessment</td>
<td>Collect, collate and design teaching and learning materials</td>
</tr>
<tr>
<td></td>
<td>Discuss textbook content, teaching points and teaching strategies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Developing Stage</th>
<th>What to do – content</th>
<th>How to do – collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the teaching, learning and assessment cycles</td>
<td>Pay good attention to links and interface between curriculum objectives for a particular grade level and the Key Learning Area (KLA) objectives</td>
<td>Establish a culture of collaboration through analyzing lesson observation, co-teaching activities and class video analysis</td>
</tr>
<tr>
<td>Share experiences of putting theory into practices or innovative teaching strategies in use</td>
<td>Review the scheme of work suggested in textbooks and re-schedule progress according to students' needs and ability</td>
<td>Invite the principal, subject panels, teachers of the same KLA and other KLAs to sit in the meetings and discussion</td>
</tr>
<tr>
<td>Analyze evidence of learning such as student work to get a better understanding of learning effectiveness</td>
<td>Consider the links and interface between different KLAs at the same level and across levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pay good attention to horizontal linkage in KLA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bring in innovative teaching strategies to enhance students' learning competence</td>
<td></td>
</tr>
</tbody>
</table>
### Mastery Stage

<table>
<thead>
<tr>
<th>Identifying areas of concern – reflection</th>
<th>What to do – content</th>
<th>How to do – collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflect on the effectiveness of teaching and learning through using portfolio, action research and other relevant and effective instruments</td>
<td>Taking into consideration the goals and objectives of education and the school vision and mission, design school-based curriculum and learning materials that are commensurate with students’ interests, needs and abilities</td>
<td>Organize internal sharing session to disseminate school-based curriculum design experiences</td>
</tr>
<tr>
<td>Observe pupil performance for evidence of learning and how they learn</td>
<td>Design flexible teaching schedules to facilitate a specific KLA development which should be supported by school resources where appropriate</td>
<td>Design cross-KLA curriculum with colleagues from various KLAs</td>
</tr>
<tr>
<td>Look for pupils’ learning characteristics, discuss how these characteristics could be catered for and tapped on in order to unleash their learning potential</td>
<td>Employ relevant and effective teaching and learning strategies to help students attain learning outcomes specific to KLAs. Pay attention to interconnectedness of strategies across levels</td>
<td>Employ relevant and effective teaching and learning strategies to help students attain learning outcomes specific to KLAs. Pay attention to interconnectedness of strategies across levels</td>
</tr>
</tbody>
</table>

*Source: Education Bureau, 2014f*

**References for Appendix 10**

1. Education Bureau, 2014f
2. Interview with teachers at a high-performing school in Hong Kong, June 2014
Appendix 11
Mentoring and Beginning Teacher Programs in Singapore
Mentoring and Beginning Teacher Programs in Singapore

Singapore provides substantial opportunities for teachers to grow professionally throughout their career. These are supported by key structural components:

1. The Enhanced Performance Management System (EPMS), which spells out the knowledge, skills, and attitudes expected at each stage of a teacher’s career, linked to defined career tracks in teaching and leadership.

2. A Teacher Growth Model, which is supported by professional learning time for teachers, and government-funded training programs.

3. Role descriptions and appraisal processes that make teachers and leaders at all levels accountable for developing the practice of more junior staff.

These features mean that all teachers in Singapore have a structure for their own professional development, as well as responsibility for developing others.

Mentoring is a core element of professional growth opportunities for pre-service teachers, in-service teachers and school leaders:

‘Professional growth is the development a teacher achieves by gaining added experience, and by methodically reflecting on his teaching...[It] is achieved through enhancing teaching and learning, enhancing instructional practice and fostering a mentoring culture. The Academy [provides] various professional growth opportunities for educators at different junctures of their teaching career...to grow a culture of learning and improvement within schools’.

— Academy of Singapore Teachers

Box 13 Enhanced Practicum: Preparing Pre-Service Trainees for Reflection and Feedback

As part of initial teacher preparation, trainees complete a ten-week school placement. The mentor uses reflective practice to coach the trainee and improve their teaching.

Four ‘focused conversations’ take place between the trainees and their mentors and university supervisors at intervals during the placement. These are purposeful conversations about how the teacher is developing their teaching competencies.

<table>
<thead>
<tr>
<th>No.</th>
<th>Week</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC1</td>
<td>1</td>
<td><strong>Portfolio Sharing: “My Learning in NIE”</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students discuss what they have learned from the courses at NIE that have influenced their conception of teaching and learning</td>
</tr>
<tr>
<td>FC2</td>
<td>3-4</td>
<td><strong>Managing Teaching and Learning I</strong></td>
</tr>
<tr>
<td>FC3</td>
<td>5-6</td>
<td><strong>Managing Teaching and Learning II</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students raise topics on issues encountered in their lessons or with their students.</td>
</tr>
<tr>
<td>FC4</td>
<td>9-10</td>
<td><strong>Portfolio Sharing: “My Learning in School”</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students share how the practicum experience helped to develop their teaching, with reference to Graduand Competencies.</td>
</tr>
</tbody>
</table>

‘[The focused conversations presented] good opportunities for professional conversation...The micro-view of each practice discussed conveyed that each lesson/practice presents complexities that these young teachers should not take for granted.’ – Mentor teacher

Pre-service mentoring

Mentoring begins while teachers are trainees at the National Institute of Education when they undertake their school-based practicum (Box 13). The host school provides a mentor (‘cooperating teacher’) to develop the trainee’s practice. A school coordinating mentor oversees the mentoring process for all the trainee teachers, as well as supporting their individual development. The school coordinating mentor helps resolve personal and professional concerns, coaching and mentoring both the mentor and the trainee in the process.³

Beginning teachers

Once appointed, all teachers receive two years of mentoring support from an experienced teacher in their school, although depending on individual needs and progress, this may be extended up to five years.⁴ This focuses on developing their instructional practice as well as getting them into established routines of personal reflection and collaborative learning with other teachers. Beginning teachers also have a ‘buddy’, another teacher with a pastoral role, who will help them to settle into the school.

‘As a beginning teacher…I greatly value my mentor who teaches in the same subject as me (English). We meet once a month and talk about the values I want my students to have for learning and how to develop all students in my class to their potential. We talk a lot about pedagogies in Singapore. My mentor also observes me regularly. Beforehand, she gives me advice on the lesson plan and how to improve it. Following the lesson we talk about what went well and how I can improve. I feel that she can advise me freely, and I listen – there are no barriers between us. It’s a very engaging process for me to learn and grow.’

– Beginning Teacher, Singapore Secondary School

Mentoring for experienced teachers

Senior teachers and lead teachers are responsible for mentoring less experienced teachers in the school. School staff developers and heads of department

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Figure 19 Mentoring Throughout the System in Shanghai

play important roles in preparing senior and lead teachers to be effective mentors.

The school staff developer is a senior education officer who plans the professional development of all staff and coordinates professional learning that meets individual and school needs. The school staff developer also works with senior teachers and heads of departments to mentor and develop teachers.\(^5\)

Master teachers guide senior and lead teachers in schools to be more effective mentors and pedagogical leaders. Master Teachers often work hand-in-hand with these teachers in delivering workshops for beginning and experienced teachers at the same time. Master teachers often host professional conversations and networked learning sessions for senior and lead teachers, deepening their subject matter and pedagogical content knowledge and providing guidance for the next level of teacher leadership.\(^6\)

**School case-study**

At a sample primary school in Singapore, beginning teachers have two guiding mentors: a buddy and an instructional mentor. The buddy teaches in the same level or subject areas and the instructional mentor helps them in developing their pedagogical, assessment and classroom management skills. During the first two terms, the instructional mentor works closely with the beginning teacher, coaching them and analyzing their development needs. The mentor introduces the beginning teacher to reflective inquiry, which extends into other professional learning (see Table 2 below).

### Table 2: Singapore Primary School - Flow of Activities for Development (Extract)

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Process</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and during week 1</td>
<td>Induction and orientation</td>
<td>Familiarization. Clarify mentor/mentee roles and expectations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss roles, responsibilities and expectations of teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discuss School context (culture, student profile)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Peer mentoring; beginning teachers from previous intake discuss their experiences</td>
</tr>
<tr>
<td>Weeks 2-3</td>
<td>Teacher mentor models</td>
<td>Beginning teacher observes mentor and experienced teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Joint lesson planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning needs analysis (supervisor)</td>
</tr>
<tr>
<td>Weeks 4-7</td>
<td>Teacher mentor coaches</td>
<td>Focused lesson observation by mentor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beginning teacher written lesson reflection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EPMS (performance and development) - by supervisor</td>
</tr>
<tr>
<td>Weeks 8-10</td>
<td>Teacher mentor promotes beginning teacher’s independent work and celebration Focused conversation</td>
<td>Student survey on beginning teacher’s teacher - co-analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focused self-analysis of teaching by beginning teacher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Holistic lesson observation by teacher mentor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Review and reflect (week 10)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teacher mentor focused conversation with beginning teacher</td>
</tr>
<tr>
<td>Semester 1 (Term 2)</td>
<td>Further development in specific instructional competencies</td>
<td>Focused lesson observation by teacher mentor (pre-observation conferencing, lesson observation, post-observation conferencing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beginning teacher written lesson reflection</td>
</tr>
<tr>
<td>Weeks 5-8</td>
<td>Teacher mentor models/ coaches beginning teacher</td>
<td>Beginning teacher lesson reflections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Co-planning of beginning teacher’s remedial lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exam duties and responsibilities, marking of exam scripts</td>
</tr>
<tr>
<td>Weeks 9-10</td>
<td>Teacher mentor and school coordinating mentor conduct focused conversation</td>
<td>Analysis of exam results, feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teacher mentor and school coordinating mentor conduct focused conversation with beginning teacher</td>
</tr>
</tbody>
</table>
References for Appendix 11


2. Academy of Singapore Teachers, 2012a

3. Ng, Pak Tee, 2012, pp. 27-28

4. Teaching is a high status profession, and there are high expectations for teacher performance. Whilst teacher professional learning is embedded at all levels in the system, teachers who are not making the grade are encouraged out of the profession: Sclafani, 2008

5. In 2006, the Ministry of Education launched a GROW package for the professional and personal Growth of teachers, through better Recognition, Opportunities, and through seeing to their Well-being. One of the features of this package is the appointment of a school staff developer (SSD) in every school. Ministry of Education, Singapore, 2006

6. Interview with Academy of Singapore Teachers, August 2014
Appendix 12

Beginning Teacher Training in Shanghai
Beginning Teacher Training in Shanghai

Shanghai has an intensive, rigorous training program for beginning teachers throughout their first year. Beginning teachers must complete a range of activities designed to build their skills in assessing student learning, identifying and planning appropriate teaching approaches and evaluating the impact of their practices. At the end of the year, beginning teachers must pass an assessment to become a fully certified teacher.

There are four components of beginning teacher training:

- School-based training (in the home school) - new component since 2012
- District standardized training program
- Learning from a high-performing ‘base school’
- End-of-year evaluation process

All the training activities are aligned to categories of teachers’ work including teachers’ professional insights, classroom and teaching experience, cultivating morality, and teaching research and professional development.¹

School-based Training (Home School)

School-based training is designed to build teachers’ skills in areas of pedagogy such as class design, teaching methods, teaching evaluation, tutoring and how to conduct didactic research.²

The program integrates classroom teaching and experience, teaching research and professional learning.³ Beginning teachers undertake a range of activities within their home school to develop their teaching and learning skills, research skills and reflective practice. Activities include lesson observation, analysis of course units and developing teaching plans and outlines, homework design, assessment design and collaborative teaching and research group activities. The activities are sequenced throughout the year, and teachers must complete and submit records of all of their activities including self-evaluations, views on demonstration lessons and comments from mentors and tutors.⁴ The manual contains a pro-forma for all program activities. A translated version of this document is available in the Toolkit.

Many of these activities are done with their mentors – one for classroom management and one for subject-specific guidance.⁵ Mentors may be experienced teachers within the home school or master teachers from outside the school.⁶ Mentors and beginning teachers work together to review and modify lesson plans and frequently observe each other’s lessons for the mentor to model good practice and provide feedback to the beginning teacher. These observations take place at least ten times per semester.

In addition, beginning teachers participate in both research and lesson groups, as do all teachers. Working with their mentor and colleagues, they learn to undertake action research projects. Beginning teachers are active participants in these groups and must lead discussions within the groups 1-2 times per semester with mentors and other teachers providing feedback.⁷

District Standardized Training Program

District training consists of face-to-face seminars and workshops one weekend per month, plus network-based teaching that teachers conduct themselves.⁸ The training is designed to develop both foundational teaching skills and professional learning skills. Foundational skills include preparing lessons and conducting classroom activities, designing homework and providing tutoring. But other workshops deal with how to conduct teaching and subject-based research and how to undertake lesson observation and evaluation and curriculum design. For an example of a district-level annual training calendar, see the Toolkit.

Learning from a High-Performing ‘Base School’

Beginning teachers frequently visit a high-performing school (or base school) in their district.
Visits can be as often as three times per week for half a day. Beginning teachers are mentored by an experienced teacher who they shadow, observe and learn from. In addition to lesson observation, teachers observe lesson and grade groups, boosting their professional learning research skills.

In addition, mentor teachers evaluate beginning teachers via lesson observation at least three times per year in accordance with the standardized training program. Mentors provide comments on the lesson goals and class plan, plus the organization of the lesson and teaching practices.

Teacher Appraisal and Evaluation

At the end of the year-long program, beginning teachers must pass an evaluation to become fully certified. The evaluation includes a national written test (including teachers’ law, pedagogy and psychology), an interview, and teaching a sample class. Once successfully completed, beginning teachers are fully certified and undertake ongoing professional learning throughout their career.

References for Appendix 12

1. Minhang District, n.d.a
2. Minhang District, 2012
3. Minhang District, n.d.a
4. Minhang District, n.d.b
5. Zhang et al., 2014, p. 155
6. Zhang et al., 2014, p. 155
7. Youai Experimental Middle School, n.d.
8. These can include a reading club, teaching forums and online tutoring: Minhang District, 2012
9. Interview with Ms. Lin, Deputy Director, Teachers’ Institute of Xuhui District, Shanghai, June 2014
Appendix 13
External Expertise
External Expertise

External Expertise in Hong Kong

Hong Kong provides expert support for schools and teachers to help improve teaching practices and student learning. On-site support from academics, former teachers and principals helps teachers implement the improvement framework. Schools can access grants to use expert support. Teaching exchanges help teachers learn from expert peers – including learning through collaborative professional learning activities that implement the improvement framework.

The four forms of external expertise schools can access in Hong Kong are described in more detail below:

1. University-School Support Programmes: Experts work with schools to develop research-based pedagogy. Researchers and experts work with teachers to assess student learning, and design, implement and refine subject specific pedagogy. University-School Support Programmes include developing English and math pedagogy through lesson study and the new Chinese reading pedagogy which has now been adopted as Education Bureau policy. The Education Bureau prioritizes funding for University-School Support Programmes based on educational priorities aligned to implementation of educational reforms and feedback from stakeholders. For more information on 2014/15 program priorities, see Education Bureau’s University Support Program information.

2. On-site support services: Provided to implement curriculum reforms including school-based curriculum development and language learning priorities. Teams of former principals, vice-principals and teachers consult with schools. For example:
   - Collaborative lesson planning for school-based curriculum development – assessing student learning, using content pedagogical knowledge, and evidence-based practices to inform the cycle of planning, teaching and reflecting on classroom teaching. For more information, see School-based Curriculum Development in Primary Schools – Collaborative Lesson Planning.
   - Experts provide support and facilitate lesson study and learning circles within and between schools to implement new pedagogies. The on-site support programs facilitate peer-based learning and reflective practices including collaborative planning and lesson observation. For information, see example case studies.
   - Peer lesson observation – supports teachers to assess student learning, develop appropriate teaching practices, implement new practices and receive feedback for further improvement. For an example of a training package on conducting lesson observation for developmental purposes, see Education Bureau's Language Learning lesson observation training presentation.

3. Grants for schools bring in experts as needed: Schools can apply for small grants to access expert academic support. A large and significant initiative is the Quality Education Fund. The Hong Kong government has provided an allocation of HKD$5 billion since 1997 (or approximately USD$645 million in 2014 dollars) for schools to access to bring in experts as needed.

4. Teaching exchanges: Principals and teachers from Hong Kong and mainland China share expertise between schools and teachers. After spending a week in each system to understand the subject-specific curriculum, teachers participate in four weeks of exchange activities including collaborative lesson planning, lesson observation, lesson review, theme-based seminars and sharing sessions. Lessons from the exchange are documented and shared more broadly with teachers across the education system.
External Expertise in British Columbia

Many British Columbia districts hire experienced teachers as consultants to schools to help build teacher skills in effective inquiry and provide targeted pedagogy and content support. These consultants are full- or part-time district staff hired to help teachers across multiple schools in the district, often with a subject specific focus area. The consultants are usually invited by teachers (teachers are not required to work with them) and they bring in resources, co-teach with teachers, observe teachers and provide feedback, or help teachers with formative assessment.

Surrey School District:
- 18 helping teachers are employed full-time across the district. Each works at multiple schools.
- Each helping teacher has a focus area (e.g., Aboriginal education or secondary math).
- They offer support and resources, model lessons, teach side-by-side, hold workshops, and help plan in-service.
- All helping teachers have to be invited by teachers – teachers usually sign up for support through their principals.

Burnaby School District:
- Program consultants are full-time district employees that make up an Educational Services Team.
- The consultants are specialized in eleven different subject areas.
- The consultants are responsible for providing advice and support to teachers and schools including supporting new curriculum implementation and assisting with staff development activities.\(^{10}\)
- They each have a small budget from the district to work with inquiry groups, do professional development, or bring resources in to teachers.

Campbell River District:
- Part-time instructional support teachers coach teachers in schools.
- The instructional support teachers are content focused, and they often tie their coaching to a formal professional development program that teachers are attending (e.g., the First Steps math program).
- They co-teach, do observations, and hold discussions. They often look at diagnostic assessments with teachers to help them interpret the data and think about next steps.
References for Appendix 13

1. Interview with Dr. KO Po Yuk, Hong Kong Institute of Education, June 2014

2. Professor Tse’s multiple school-based research projects ‘Effective Teaching and Learning of Chinese Language in Primary Schools: Vocabulary Acquisition and Enhancing Reading’ were in part funded by the Quality Education Fund.

3. See Appendix 10 for more detail on the collaborative lesson process more generally.

4. For example, see Taskforce on Language Support, Education Bureau, n.d.

5. See, for example, the Quality Education Fund: www.qef.org.hk

6. Several schools interviewed commented that they have used these funds to employ academics to conduct lesson observations for teachers at their schools.

7. Education Bureau, 2014g

8. Education Bureau, 2014d

9. These sharing sessions are documented and made available online. See, for example, Education Bureau, 2014b

10. http://admin2.sd41.bc.ca/services/education/program_consultants.htm retrieved 31 October 14
Appendix 14
Guide to lesson Observation and Demonstration Case Studies
Guide to Lesson Observation and Demonstration Case Studies

Observation is key to giving teachers meaningful, concrete feedback on how to improve. When teachers observe and reflect on effective teaching and apply this to their own practice, it can have a substantial impact on students’ learning.¹

This section gives an overview of how lesson observation is done in high-performing systems. It is routine in some systems, but in others, it is still gaining traction. But it is possible to overcome teachers’ reluctance by emphasizing its use for developmental purposes.

The Lesson Observation Process

When done well, the lesson observation process focuses on students’ learning, not the teaching. Teachers begin the process by analyzing what their students know and can do, as well as how their students learn best.

Prior to the lesson observation, teachers and observers should meet briefly (5-10 minutes) to discuss the lesson objectives and teaching plan and the background of the class.

The focus of the observations during the lesson should focus on students and their learning – not just teaching.² Observers can assess this via students’ in-class behavior including students’ understanding of the content, student dynamics, teaching behavior and interaction with students.

A post-observation meeting between the teacher and observer should include feedback on both what the teacher did and how the students responded. The discussion is a chance for the teacher to reflect on the lesson and identify strategies to improve with the observer.

‘It’s not only about observing teachers but about observing student learning’.³

Evidence on Effective Lesson Observation – Focusing on Student Learning

The focus and quality of observations matter – observations provide the evidence for feedback to improve learning and teaching. Given the objective of teaching is to improve student learning, observations should:⁴

- Focus on student learning, not just teaching. Observers should understand the impact of teaching via students’ in-class behavior.

Figure 20: Lesson Observation Process

• Focus on specific students. Different students will have different learning experiences. Observation should help teachers to analyze and respond to individual needs and track their progress over time.

• Learn together and take turns. Teachers will have different perspectives from observing learning and teaching. Teams of teachers benefit when they collaborate on the objectives, planning and delivery of lessons, and provide feedback to each other. Learning is more effective when there are multiple perspectives, and a shared commitment to improve.

Case Study: Learning Study at The Hong Kong Institute of Education

The Centre for Learning Study works with schools to implement a ‘learning study’ program which incorporates lesson observation. Based on the Japanese format of ‘lesson study’, the program narrowly focuses on one particular lesson. Learning study is a cycle where teachers of one grade level work with researchers to define the topic and student learning outcomes. For example, in primary schools it could be how to add fractions, or the correct use of the past tense.

Researchers then conduct pre-lesson tests and interviews with students to assess their current level of understanding and what they find difficult about a topic. Interviews are conducted with students of low, medium and high abilities while classroom teachers observe. These interviews are important – while teachers have the content pedagogical knowledge, they may not understand why students do not understand something.

For example, in a math lessons on fractions, students are asked to compare 1/4 and 1/8 to identify which fraction is bigger. Some children respond that 1/4 is bigger because the teacher’s instruction was that the smaller the denominator, the bigger the fraction. When asked to compare 1/4 and 5/8, the students still say that 1/4 is bigger – based on the same reasoning – because they are only considering the size of the denominator rather than interaction between denominator and numerator.

Researchers use this information to work collaboratively with teachers to design a lesson plan. Teachers then teach the lesson as planned, observed by researchers and other teachers. Together they debrief and make adjustments to the lesson plan. Once all teachers have implemented the lesson, post-test reviews and student interviews are conducted to assess the impact of the pedagogy.

The value of this approach is both in developing research-based pedagogy and in helping teachers to analyze student learning, and undertake collaborative lesson planning, classroom observation and reflection on their lessons.

Box 14 Making Lesson Observations More Reliable

Lesson observation is a subjective practice. Variations between observers can occur in data collection, observations and therefore feedback. The number of observations and observers effects the reliability of lesson observations. The Measures of Effective Teaching (MET) project identified a number of factors that increase the accuracy – and therefore feedback. These include

• training classroom observers – including training them in using observation tools,

• using more than one observer,

• using a combination of peer observers and school administrators, and

• using three 15-minute lesson observations by peer observers.

Source: Bill & Melinda Gates Foundation, 2013
Lesson Observation Tools – Collecting Data

Lesson observations provide helpful data and feedback to teachers to solve problems in their lesson planning, delivery and teaching strategies. In Singapore, mentors conduct lesson observations with student teachers throughout their practicums. In a pre-observation meeting, mentors and teachers review the lesson plan to ensure that the lesson has meaningful objectives, is pitched at an appropriate level for the class’s learning abilities and is workable in terms of the teaching methods and timeframes.\(^5\)

During the lesson, the observer undertakes a focused and systematic observation and recording of the lesson. They work as an unobtrusive data gatherer, allowing the teacher to teach uninterrupted. The observer focuses on three questions:\(^6\)

1. What is going on in this classroom?
2. What changes might be made to improve learning?
3. What type of observation seems most useful at this point?

The observation form focuses mentors on two main areas: teaching processes, and professional attributes and attitudes (see Figure 22). Teaching processes include lesson preparation, lesson implementation, feedback and evaluation, and classroom management. Professional attributes include learner-centered values, teacher identity and service to school.

The mentor’s analysis of data collected focuses on student learning and the ways in which the teaching facilitated or impeded learning.\(^7\)

Mentors and teachers conduct post-lesson feedback meetings on the same day – as soon as possible after the lesson. Mentors take a problem-solving approach, encouraging teachers to reflect on how the class went including recalling specific interactions with students – both positive and negative. Together, they identify causes for issues, as well as strategies to overcome problems.\(^8\)

Figure 21: Learning Study Cycle

![Learning Study Cycle Diagram](source: Interview with Dr. KO Po Yuk, June 2015)
### Part A: Teaching Processes

<table>
<thead>
<tr>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson preparation</td>
</tr>
<tr>
<td>Lesson implementation</td>
</tr>
<tr>
<td>Feedback and assessment</td>
</tr>
<tr>
<td>Classroom management</td>
</tr>
</tbody>
</table>

#### Competency Level

- Excellent
- Proficient
- Satisfactory
- Emerging
- Not Yet

#### Comments

- (strengths, areas for improvement and suggestions)
- (strategies, areas for improvement and suggestions)

---

**Figure 22: Singapore – A Pre-Service Practicum Lesson Observation Form Extract**
## PART B: PROFESSIONAL ATTRIBUTES AND ATTITUDES

Please note that feedback for Part B need not be based on lesson observations. Evidence can be obtained from the student teacher’s reflections, feedback conferences and observations of his/her interactions.

### ATTRIBUTES / ATTITUDES

In the brackets provided:
- Insert '+' when the attribute/attitude is a strength;
- Insert '-' when the attribute/attitude is a weakness;
- Leave blank when the attribute/attitude is neither a strength or a weakness;
- Insert 'NA' when there is no opportunity for the student to demonstrate the attributes/attitudes.

### COMMENTS

(  ) (  ) (  ) (  ) (  )

Teaching:Areas for improvement and suggestions:

<table>
<thead>
<tr>
<th>Date</th>
<th>Signature</th>
<th>Name of Cooperating Teacher / NIE Supervisor</th>
</tr>
</thead>
</table>

- Supports school’s ethos and programmes
- Works well with peers and colleagues
- Shows initiative

- Show good management
- Is sensitive to socio-cultural diversity
- Maintains pupils’ work record and accuracy
- Comprises and abides by school’s code of conduct
- Refers promptly for lessons and school events
- Is reflective
- Is receptive to feedback
- Shows perseverance
- Adapts to different situations when necessary

TEACHER IDENTITY

- Has professional integrity
- Has high expectations of pupils
- Encourages pupils to try their best
- Shows care and concern for pupils
- Projects a professional image

SERVICE TO SCHOOL

- Shows initiative
- Works well with peers and colleagues
- Supports schools’ events and programmes

LEARNER-CENTRED VALUES

- Shows care and concern for pupils
- Projects a professional image

(please tick one)
- Excellent
- Good
- Acceptable
- Unacceptable

Observation forms focus on student learning

Pro formas and data collection tools help observers to focus on student learning. When discussing the lesson objectives and lesson plan, teachers and observers can select an appropriate aspect of teaching and learning to focus on, as well as an appropriate tool to collect evidence.

For example, at one school in Hong Kong, the focus of peer lesson observation is to improve teachers’ questioning techniques in order to develop students’ critical thinking, analysis and problem solving skills.\(^9\) The school developed a lesson observation and data collection form specifically related to this pedagogical approach. Observers are asked to rate teachers on a range of indicators. For example, ‘teachers can use different levels of questions to guide students to learn (including knowledge, comprehension, application, analysis, synthesis and evaluation)’ and ‘teachers can use different questioning techniques to guide students to learn (recalling, probing, inviting, giving tips, investigating, redirecting and reverting)’.\(^{10}\)
Observation results

Feed Back (See Attachment)

1. Generally speaking, the teacher's questions can echo the learning objectives. 
2. The teacher can use different levels of questions to guide students to learn.
3. The teacher can use different questioning techniques to guide students to learn.
4. The teacher's questions can arouse students' motivation to learn.
5. The teacher can provide sufficient time for students to think and to answer questions.
6. The teacher can appropriately give feedback to students' answers.

6 marks represent 'very satisfactory'.
Training in How To Conduct Lesson Observations

In several systems, teachers learn how to conduct lesson observation through mentoring and learning from senior colleagues while undertaking peer lesson observations. In addition, teachers learn how to conduct observations and observation through workshops and seminars, or as part of other professional support services and activities such as University-School Support Programmes in Hong Kong.

In Singapore and Shanghai, training on conducting lesson observation is built into the education system as part of their standardized beginning teacher training program. This is reinforced through ongoing exposure to lesson observation through school-based research groups and demonstration classes.

In Singapore, mentors for student teachers are trained in how to undertake lesson observations so the student and observer have clear expectations about the purpose of observations and the process (discussed in Appendix 11). This training is conducted through the National Institute of Education (NIE).

Hong Kong

The frequency of formal classroom observation varies among schools. In one school teachers undertake the process four times a year (twice observing others, twice being observed). At Evangel College, the number of observations teachers conduct each year depends on their seniority: a classroom teacher carries out two observations, ‘form’ teachers do four, and vice principals six. In another school, formal lesson observation only happens once per year. Some schools also invited university staff into the school to conduct lesson observations.

Lesson observation can happen informally within schools. Principals and teachers in several schools commented that they now invite teachers into their classrooms to observe and provide feedback, particularly colleagues from the same faculty.

In other schools, vice principals and subject coordinators who observe good teaching practice suggest staff go and observe the same teacher.

Each school interviewed had developed their own classroom observation form or adopted the official classroom observation form used by school inspectors as part of the Education Bureau’s External School Review.

Singapore

In Singapore, lesson observation takes place in formal mentoring programs for trainee and beginning teachers; in individual performance appraisals; and within professional learning teams who plan, deliver and assess lessons together (see Appendix 11 for information on induction and mentoring programs).

One Singapore primary school uses lesson observation and feedback from supervisors to develop their beginning teachers and for other teachers to learn from each other. Senior teachers hold pre-conference meetings with novice teachers to discuss their lesson planning before observing the lesson, then they meet shortly after for feedback.

Box 15 Lesson Observation to Implement Reform – Change in Medium of Instruction

At Yan Oi Tong Ting Ka Ping Secondary School, lesson observation was used to implement a new instructional approach when the school switched to delivering math and science lessons in English, rather than Chinese. English teachers acted as mentors to math and science teachers, observing their teaching and provided feedback on the classes. External experts from the Faculty of Education, Chinese University of Hong Kong also took part. As a result of the lesson observations, the school organized professional development workshops for each subject area and sessions in phonics to assist the teachers to improve.

Source: Interview with Yan Oi Tong Ting Ka Ping Secondary School, June 2014
and reflection. The novice teacher must also identify a point of learning from the observation that they will implement in their teaching.

School leaders see a range of benefits from teachers observing and reflecting on each other’s lessons. The most significant success has been to increase the focus on students’ learning and outcomes. Teachers have also improved their subject matter and pedagogical knowledge, and there is a sense of increased collegiality within schools.

Shanghai

Shanghai teachers have been socialized into an environment where they are used to observing each other’s lessons. They are also used to giving and receiving feedback in a culturally appropriate, respectful manner.\(^{15}\)

Lesson observation is typically used by teaching-research groups within a school to explore teaching issues. Over the course of a semester, teachers within a research group or lesson planning group will observe and critically evaluate each other’s lessons. This will generally include a pre-lesson planning meeting, and post-lesson analysis of the teaching and learning approaches used.\(^{16}\)

A group may pick one or two members to give a demonstration lesson. Others may have several teachers to lead classes on the same topic, but using different approaches for different student groups.\(^{17}\) All the group members observe and discuss the lessons and highlight their strengths and weaknesses. The teachers may then revise the lesson and the process is repeated as a cycle to increase teaching effectiveness.\(^{18}\)

‘This approach is ‘one lesson that is polished many times, conducted many times and revised many times’. The teacher is not a ‘lone soldier at battle’. They should cooperate, share, learn and help each other as a body. The shared body is the experimental ground, the research group, which helps the teachers solve classroom problems together, learn from each other’s strengths’.

-Vice principal\(^{19}\)

Different teachers will have different impressions of any lesson. This is a challenge for group lesson analysis discussions. The quality of the critique relies on the records kept by the observers. Many schools now video the lessons and use the recording in the after-class discussion. This focuses the group on evidence-based analysis of what took place.

Research groups are particularly interested in how a lesson helps students to learn. Model classes therefore use two cameras, one of which records student activities in the class. The evaluation of the lesson can include analysis of student participation and how well student activities are organized.\(^{20}\)

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**Box 16 Observation and Feedback to Improve Practice Ting Ke Ping Ke**

Observation and feedback to improve the quality of teaching is called ‘ting ke ping ke’. This means ‘evaluation, analysis, and suggestions of/for the lesson based on observation’. A ting ke ping ke activity consists of three parts: peer classroom observation, explanation by the teacher who delivered the lesson, and feedback from colleagues.

The teacher who delivered the lesson will outline their approach to lesson planning, how and why the lesson differed from the plan, and present a self-assessment of their own lesson. Group feedback includes discussion, analysis, comments and suggestions.

A cycle of ting ke ping ke observation and discussion takes at least two teaching periods (half a day). They take place every 2-3 weeks and all teachers, novice and experienced, will take a turn to deliver a lesson.

*Source: Tan, 2013*
Most teachers will observe six lessons or more during a semester. Novice teachers may be asked to observe more than 30 periods of classroom teaching every semester. They are also observed more frequently than other teachers to be ‘immersed into the teaching profession’ to improve their teaching skills quickly.21

“The young teacher will first prepare and conduct the lesson, ask his or her mentor to review it, and then conduct the lesson again. The teaching-research group will then discuss, revise it and she will conduct the lesson again. After three or four rounds, the new teacher will be well trained in the basics of lesson teaching.”

In the Huang Pu District, the Teacher Training Institute provides training on how to conduct effective classroom observation. The training emphasizes that observation should focus on student learning, and that observers should understand the effectiveness of teaching via students’ in-class behavior. Observers are encouraged to engage in the class activities and to focus on specific students so that their progress can be tracked in subsequent observations.24

Teachers are also evaluated by school leaders on the quality of their classroom observation and evaluation and demonstration lessons. This appraisal is key to determining their promotional prospects.25

**Demonstration Classes – Learning From Each Other in Shanghai**

In Shanghai, teachers learn from each other through demonstration lessons conducted at both the school and district level. All teachers are expected to prepare and teach lessons especially for observation by others.26

Formal observation can also take place between schools or on a larger scale at the district-level with expert teachers giving demonstration lessons for teachers from many schools to learn from. Lessons may be delivered by subject leaders, master teachers and experts from teacher training colleges.27

**Example: Physical education demonstration lesson at Longming Road Kindergarten**

A high-performing teacher presented a physical education lesson for six-year-old children to 150 colleagues across the district. The objective was for the observing teachers to assess how effective the lesson was in developing students’ physical education, thinking strategies, and collaborative skills.

The demonstrating teacher outlined the lesson design and rationale before the lesson began. During the lesson, all teachers in the room had iPads to record their observations via an online app. One group of teachers sat level with the students as ‘official observers’. They focused on watching the students and their learning.

After the lesson, teachers came together to discuss the ratings and data collected during the demonstration. The statistics highlighted trends and differences in teacher ratings throughout the lesson. Charts compared comments on the learning versus the teaching, which enabled analysis of the impact of the teaching on student behavior. Teachers engaged in deep, highly nuanced – but data-centered – discussion about the lesson.

**Technology – Enhancing Observation and Teacher Feedback**

Many places now use video recordings of classes where teachers and observers can review the lessons while discussing feedback.

Shanghai is investing heavily in technology to share demonstration lessons more widely, particularly to help rural schools. Some demonstration lessons are recorded and a large repository is made available to all schools on the municipal teaching-research portal.

Schools organize lesson planning group sessions to view and analyze a lesson. Teachers grade the lesson
and upload comments through a staff portal. Some schools require teachers to take part in at least six rounds of group lesson analysis and to upload their critiques. Some special-grade teachers and principals have also been invited to give talks to district audiences, commenting on the vast number of lessons.29

Technology is also being used during actual observations to enrich feedback. In one demonstration class visited, observing teachers use an iPad to rate the lesson design as well as aspects of the teaching and/or student learning – a variety of apps are used with different foci.30 The software then generates a range of statistics based on teacher ratings that help guide discussions post-observation and make it more grounded in an evidence base. For example, the statistics can show:

- Individual teacher ratings against the average rating for the class, so each teacher can see where their judgment sits relative to others;
- Comparisons between observers of the same student, highlighting any differences for group discussion;
- Comparisons of teacher pre-judgments on lesson design with actual ratings post-lesson; and
- Comparisons of comments on teaching practices to comments on student learning progress – in the same class. Results can be compared at different points to dissect how certain teaching approaches affect students.31

References for Appendix 14

1. Hattie, 2009
3. Interview with teachers at a Hong Kong school, June 2014
9. This is one of the school’s three ‘major concerns’ or major foci of the school’s development included in their three-year plan, linked to Hong Kong curriculum reform.
10. Interview at a Hong Kong school, 18 June 2014. See Sample school peer lesson observation and data collection forms in Toolkit
12. Interview with the principal at a high-performing school in Hong Kong, June 2014
13. Interview with teachers at a high-performing school in Hong Kong, June 2014
14. Interview with Po Lin Cheng, Vice Principal, Evangel College, June 2014
15. Tan, 2013, p. 192
16. Jensen et al., 2012
18. Tan, 2013

20. OECD, 2010c, p. 94. A significant change has been implemented in recent years through the slogan ‘return class time to students’. This calls for an increase in time allocated to student activities in classes relative to teachers’ lecturing. This has caused a fundamental change in the perception of a good class, which was once typified by good teaching, with well-designed presentations by the teachers.

21. Wang, 2014
24. Jensen et al., 2012

26. Some schools even have open days, when all the lessons are open to everyone: students, teachers, parents and members of the public: Ju, Y., 2013, p. 366; Wu, G., Zhang, C., & Tian, L., 2009, p. 93 in Tan, 2013, p. 190
27. Salleh & Tan, 2013, p. 156
28. School visit, June 2014
29. The Shanghai ‘862’ reform project, described in Tan, 2013, p. 138
30. Demonstration lesson, Shanghai Kindergarten School, June 2014
31. Demonstration lesson, Shanghai Kindergarten School, June 2014
Appendix 15

Leadership: Job Descriptions of Professional Learning Leaders in Schools
Leadership - Job Descriptions of Professional Learning Leaders in Schools

School-Based Professional Learning Leaders in British Columbia

All British Columbia schools focus on giving experienced teachers leadership opportunities, and these are often informal roles where teacher leaders are still seen as peers to other teachers in the school. In the Delta School District, each school appoints a coordinator of inquiry to work with principals to facilitate teacher inquiry. Each coordinator applies for the role during a formal application process and is interviewed by the school principal (see Toolkit for job descriptions). The coordinators have about one-half day per week of scheduled time for their inquiry work. Modelling inquiry is a major part of their job, but they also facilitate inquiry group meetings and help teachers find professional learning resources.

Coordinator of Inquiry at Sample Elementary School in the Delta School District

At one B.C. school the coordinator of inquiry leads the inquiry process in math. She was in charge of rolling out the new math inquiry in 2013. She used teacher surveys to gather data on teacher comfort with math instruction and teacher inquiry needs (see Toolkit to view surveys). She also planned and facilitated the summer professional development day that introduced the inquiry to teachers. The coordinator has one afternoon per week to work with teachers, but the majority of her planning work is done outside of this period, mostly in her personal time.

The coordinator of inquiry role varies based on needs but includes the following responsibilities:

- Planning and leading professional development days during the year
- Meeting with each teacher to discuss math in their classrooms and what they notice about their students’ learning (successes and challenges)
- Co-planning and co-teaching math; debriefing lessons with teachers
- Demonstrating lessons to facilitate teacher learning
- Providing release time for teachers to meet in inquiry groups
- Providing resources and support with inquiry projects
- Collecting and documenting ‘stories’ of teacher learning
- Organizing parent workshops and family math nights
- Helping teachers incorporate technology in math lessons

School Staff Developers in Singapore

Singapore school staff developers (SSDs) are critical in connecting school-level strategic planning with the development needs of teaching staff in their school. They are the linchpin; working with school leaders to connect high level school and system directions to their intimate understanding of teaching practices in the school.

The SSD is a senior leadership post, provided in addition to the heads of departments in schools because of the importance placed on professional learning. They are appointed to the role based on suitability and experience, where they receive training in planning and coordination of professional learning. SSDs champion, plan and help implement professional learning programs in the schools. Specifically, the SSD plays the following roles in school:

- Planner and designer of professional development who ensures training and professional development programs are customized to the needs of staff
Beyond PD: Teacher Professional Learning in High-Performing Systems

- Champion for staff learning who facilitates training for teachers
- On-site coach who works with senior and lead teachers and heads of departments to mentor teachers and to guide them in developing their careers
- Resource to provide expertise in good teaching practices
- Staff well-being sponsor

The SSD coaches senior and lead teachers and heads of department so that they can mentor and develop less experienced staff. They also design training and professional development programs that are customized to individuals’ needs, and that also support the school’s goals.

In school strategic planning, the SSD works with school leaders to generate the Total Learning Plan for the school. This plan sets out how the teacher development needs of the school will be met. The SSD collects and analyses strategic, departmental and individual learning requirements, and aligns these with the goals of the school.

The SSD takes a big-picture view of teacher development and career progression throughout the school, but must also have a detailed understanding of individual learning needs. This involves:

- Working with the National Institute to provide high-quality placements and mentoring for trainee teachers
- Leading induction and mentoring programs for new and novice teachers
- Coordinating the Work Review process to take into consideration teachers’ development needs
- Coaching senior and lead teachers to mentor less experienced staff
- Working with school and department leaders to plan key learning across the school – for example, to implement national teaching initiatives, or to put into effect new teaching approaches developed by professional learning teams.

Hong Kong Curriculum Leaders

In Hong Kong, a professional learning leader position was established in every school to implement school-based curriculum development through professional learning practices. The school-based curriculum development necessarily involved teacher participation and drove improvements in teaching and learning.

The curriculum leader’s role is explicitly to implement school-based curriculum development. However, this includes leading the improvement of teaching and learning, promoting a collaborative work culture of professional exchange and developing and modeling different teaching strategies. A curriculum leader’s role is to:

- Assist the school head to lead whole-school curriculum planning and facilitate implementation of the plans
- Support the school head in planning and coordinating assessment policy and assessment practices
- Lead teachers/specialist staff in improving learning and teaching strategies
- Promote a professional exchange culture
- Take up a reasonable teaching load for trying out or piloting different strategies for further curriculum development.

The curriculum leader position was initially created for five years. However, the position was subsequently made permanent within schools. They are supported by the Education Bureau’s School-Based Support Services (SBSS).
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2. Personal Communication with COI at Annieville – 11 November 14
3. Education Bureau, 2014d, Education Bureau, 2014e
4. Education Bureau, 2014d
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