Overseas Practicum Exchange: 
Exposure to Learners’ Diversity in Mathematics

Presented by:
Cheng Wing Ki Phyllis
Wong Pak Hei Winsome
PGDE Mathematics Student

Background Information
- 4-week exchange programme jointly organized by HKU and UBC
- Assigned to a local public school in Vancouver
- Experienced the school education in Canada
- Opportunities to observe various classes and to teach Grade 11 and Grade 12 classes.

An Overview of the Canadian Education
- No banding
- No public examinations
- Day 1 – Day 2 Schedule
- 4 periods a day, each of 100 minutes
- Class Size ~ 20-30 students
- Students move between lessons

Experience Sharing – How do teachers cater individual needs?
- Curriculum Planning
- Class Activities
- Assignments
- Assessments
Curriculum Planning

- Mathematics curriculum covers only 8 topics in a year.
- Each chapter lasts for around 8-10 classes, with 6 classes of teaching and 2 classes of review, field trip or mathematics games.
- Contents covered is broad, but not in depth.

Curriculum Planning

<table>
<thead>
<tr>
<th>Grade 11 (Weakest Students)</th>
<th>Grade 11 (Elite Students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace Math Grade 11</td>
<td>Pre-calculus 12</td>
</tr>
<tr>
<td>Weakest students across the grade. Need to learn the minimal in order to graduate. They could not even manipulate fractions properly.</td>
<td>Students take this course in order to equip themselves for the advanced calculus course in Grade 12. One year ahead of the majority of students.</td>
</tr>
<tr>
<td>Curriculum: Learn basic mathematics like scale, simple interest, budget, volume etc.</td>
<td>Curriculum: Similar to HKDSE level – Trigonometry, Permutation/Combination</td>
</tr>
<tr>
<td>Quiz/Test: All formula given to students.</td>
<td>Quiz/Test: No formula provided.</td>
</tr>
</tbody>
</table>

Class Activities

**During Lessons**

**Peer Tutor:** In most of the classes, there will be a peer tutor from Grade 12. The peer tutor serves as a volunteer during his/her free period to help the juniors. The peer tutor could gain voluntary work hours.

**Educational Assistant:** Assistants are assigned to help students with special needs and also in weaker classes.

Class Activities

**During Lessons**

**Collaboration Activities**

- Divided into small groups
- Students help each other to finish the worksheet.
- Teacher passes by weak students to offer help.
Class Activities

**Flip the Classroom**

<table>
<thead>
<tr>
<th>Traditional Teaching</th>
<th>“Flip the Classroom” Teaching</th>
</tr>
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<tbody>
<tr>
<td>Students build up concepts by - listening to teachers’ guidance - working on class exercises</td>
<td>Students build up concepts by - watching the video prepared by teachers at home.</td>
</tr>
<tr>
<td>Students consolidate their knowledge by - doing classwork - doing homework</td>
<td></td>
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</table>

**An Extra Sharing - (Grade 11 Math Class)**

A teacher splits the class into groups. Teaching progress of each group is different. Teacher goes around groups in every period. There is a scheme of work. The weakest group will still meet the schedule.

**Outside Lessons**

Teachers are open to students during lunch break and after school. Students may enter teachers’ classroom and work there.

**Tutorial Session per Week**

The tutorial blocks allow students to come to the teachers’ classroom and ask for help. Talented students are encouraged to come to tutorials as tutors.

**Assignments**

- Homework is voluntary!
- Most students finish their homework before coming to class.
- Cross-subject assignments are always given to students.
- To ensure students on the right track, quizzes are given in a regular basis.
Assignments

Assessment

Assessment: Quizzes and Tests
Quizzes and Tests are flexible. Students can leave early after they finish or stay a little longer if they have not completed. Re-quiz and re-test are available. Students could opt to retake at most two times in a term.

Assessment

Daily Assessment
‘Exit Slip’
Consists of 2 or 3 questions about that particular lesson and students are given time to complete that at the end of the lesson. The teacher would sort out different types of common errors made by students and record the errors of that student in the spreadsheet. So, a spreadsheet generating errors made by individual will be set up.

Experience Sharing – Benefits of teachers owning their own classroom

- Teachers decorate the classroom with subject themes.
  - Students associate their learning experience with a particular place or decorations.
- Different ground rules are set in different classroom. (Better for discipline management)
- Students know where they can find their teachers!
Conclusion

Understanding the needs of students and establishing solid relationship with students are essential. Although it might be difficult to apply all strategies as the education system is different, wonderful insights have been gained from the exchange teaching practicum. Peer tutor and daily in class assessment might be feasible in a HK classroom.