

Effects of the Remedial Course to the College Students with Lower Numerate Literacy



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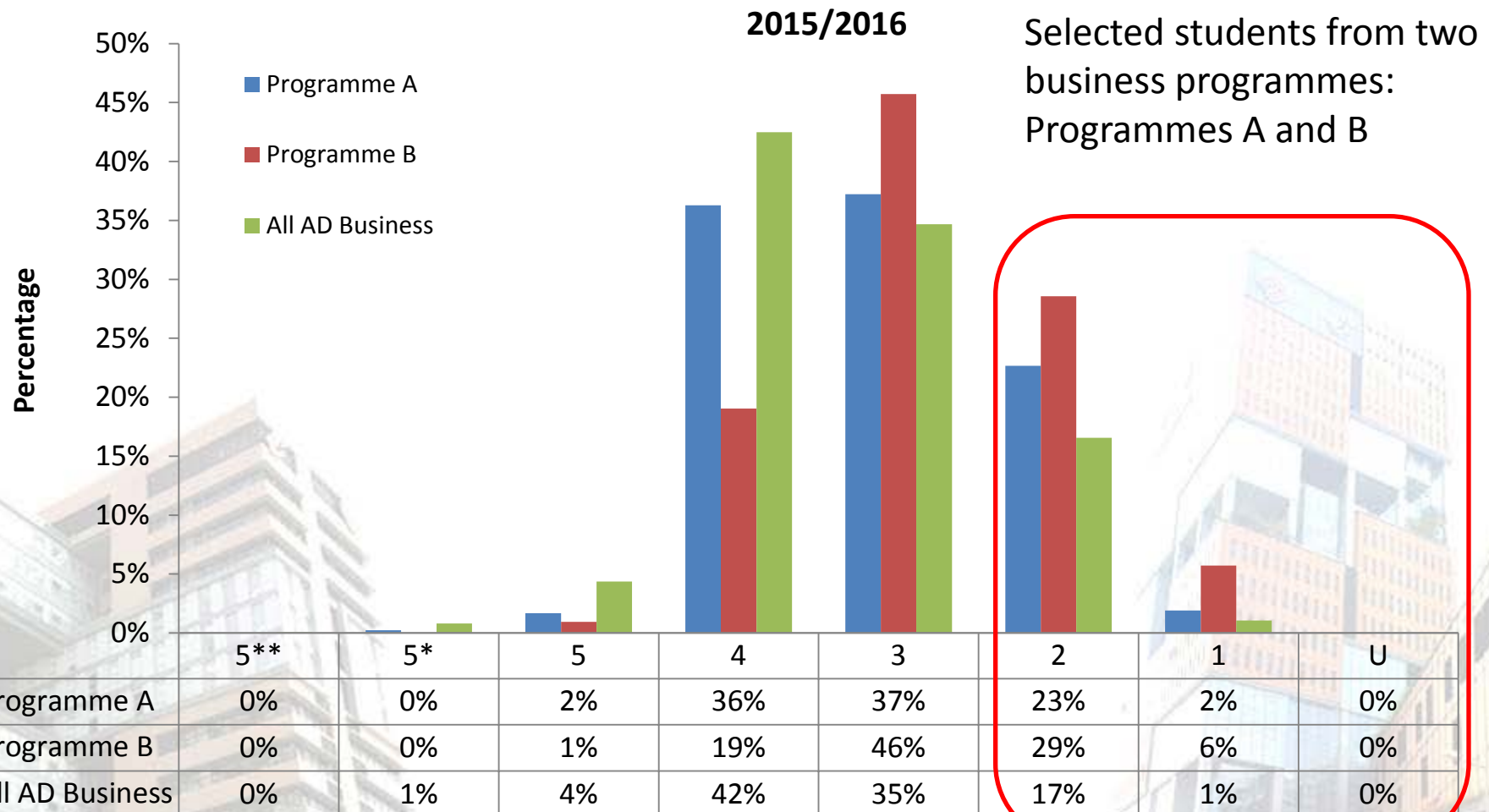
Presentation Outline

- Purpose of the study
- Students' Background - HKDSE Math Compulsory Part
- Target Students
- Information of the Remedial Courses
- Regression Analysis and Results
- Feedbacks from Students and Lecturers
- Conclusions
- Recommendation and Further Studies

Purpose

- No entry requirement for Hong Kong Diploma Secondary Education (HKDSE) Mathematics - Compulsory Part for majorities of Associate Degree (AD) programmes in Hong Kong.
- Some students may studied math subject using Chinese as the medium of instruction (MOI) during their secondary school.
- Educators in tertiary institutions face significant challenges in teaching these students, particularly those with lower level of numeracy.
- Additional learning supports in mathematics/statistics are recently gaining tertiary institutions' interest and/or demand in response to the students' needs.

Students' Background - HKDSE Math Compulsory Part



Target Students

Stage one AD students admitted
 under these 2 selected
 programmes in 2015-2016 Cohort
 and with Level 2 or below in
 HKDSE Maths Compulsory Part.

HKDSE - Maths Compulsory Part	Level 2 or below	Above Level 2
Programme A	25%	75%
Programme B	35%	65%



Information of the Remedial Courses

- Remedial course was tailor-made and aimed to provide additional supports to the selected students.

Remedial Courses

Offering Quota	140 (35 students per class)
No. of Classes	3 Classes for Programme A 1 Class for Programme B
Date of Remedial Course	Week 2 - 4 (i.e. 7 Sep to 25 Sep 2015)
No. of Lessons	6 lessons (i.e. 2 lessons per week)
Duration of Each Lesson	2 hours per lesson (During day time)

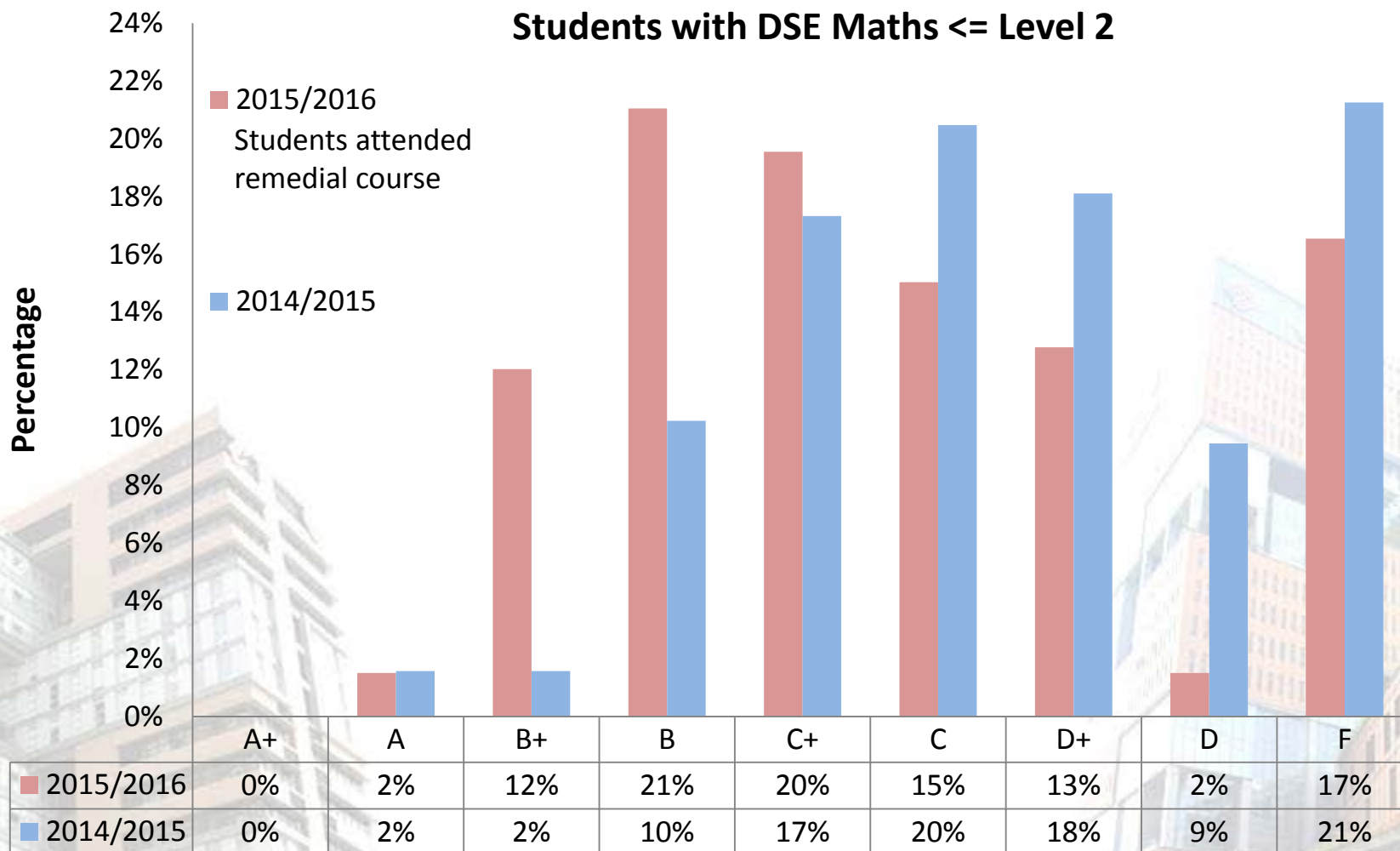
Information of the Remedial Courses

- The remedial courses were held through small class tutoring, in-class exercises and quizzes.
- The teaching materials were developed based on the materials that students learnt in their secondary education which contain:
 - (i) preliminary exercises,
 - (ii) drilling exercises, and
 - (iii) three open-book quizzes.

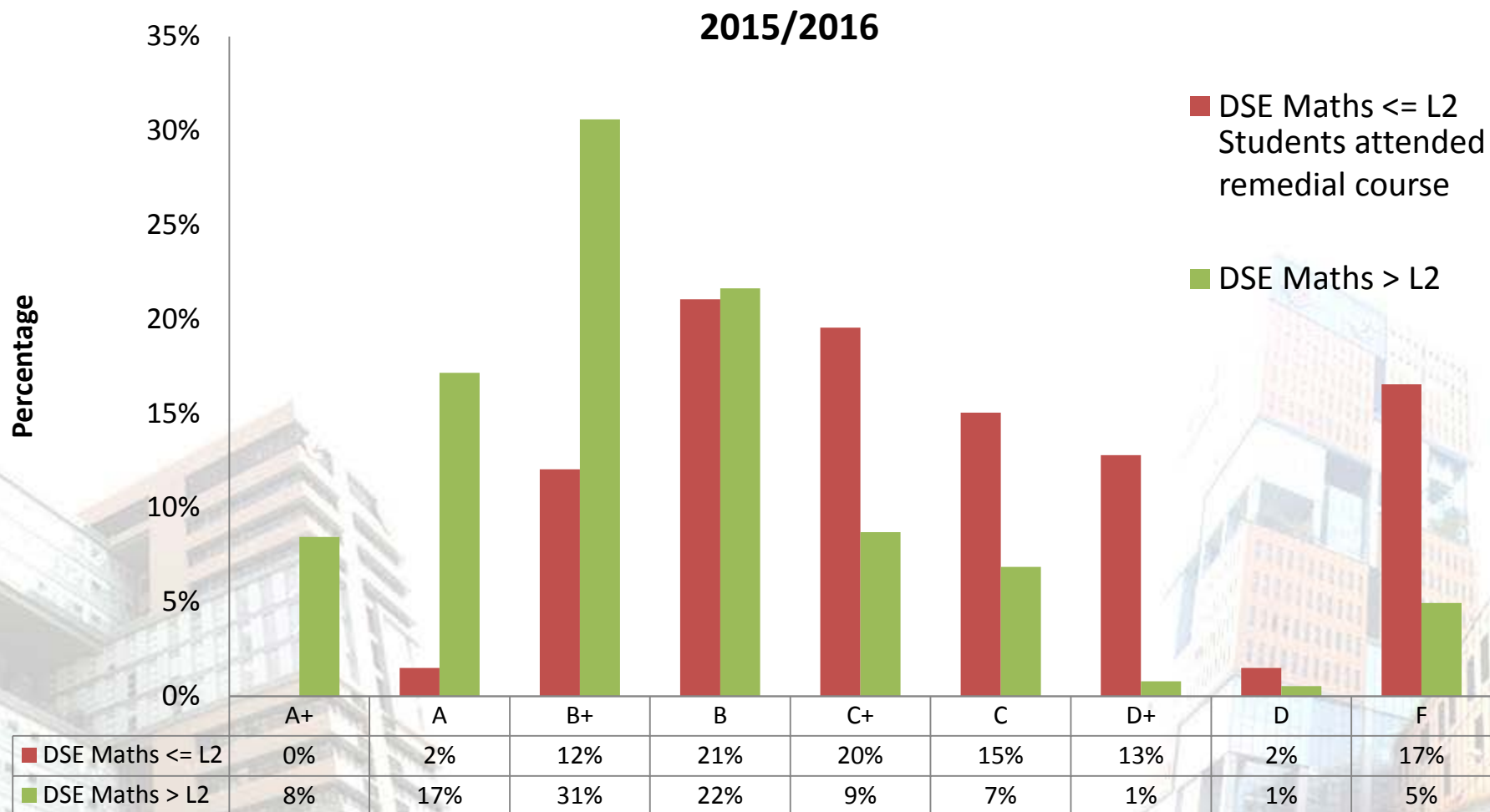
Regression Analysis

- Regression analysis was performed to evaluate the effectiveness of the remedial course on the **students' performance** in studying the General Education (GE) Compulsory Maths Subject for AD Business Scheme in HKCC.
- Factors: DSE Maths Level, Marks of Quizzes and Number of Lessons.
- The effect of the above factors to the overall mark of the GE Compulsory Math Subject was evaluated.

Results in GE Compulsory Mathematics Subject



Results in GE Compulsory Mathematics Subject



Results of Regression Analysis

	Factor	Coefficient	Standard Error	t-value	Significant
Overall – DSE Math Level	Constant	21.510	7.348	2.927	0.004**
	No. of Lessons	17.004	2.605	6.510	0.000**
<p>No. of Lessons Attended ↑</p> <p>→ Overall Mark ↑</p>					
Programme B	Constant	2.162	13.743	0.157	0.876
	DSE Math Level	23.933	6.734	3.554	0.001**
	No. of Lessons	3.413	1.729	1.974	0.058*

*The effect is significant at level 0.1.

** The effect is significant at level 0.05.

Feedbacks from Students

- A questionnaire survey was carried out at the last lesson of the remedial course to glean the feedbacks from the students regarding the usefulness of the remedial course.
- Positive comments on remedial course were received from the students.

Question (on a 10-point scale with 10 equals to strongly agree)	Mean
1. The remedial course is well organized.	7.3
2. The remedial courses had a positive influence on my understanding of the subject materials.	7.6
3. I received positive attention during the remedial courses.	7.3
4. I am satisfied with the overall arrangement of the remedial courses.	7.3
5. Now, I am confidence that I can solve the exercises independently.	6.7
6. The remedial courses were helpful to me.	7.6

Feedbacks from Lecturers

- A post-teaching report was developed to collect lecturers' comments/recommendations to further improve the remedial course and to glean the reasons/problems that lecturers faced in the lessons.
- Lecturers reported that:
 - Many students forgot much basic knowledge of Mathematics and Statistics learnt in their secondary education.
 - Students' mathematics background was below average.
 - Students learned Mathematics in Chinese during their secondary school. These students found difficult to understand questions in English.

Conclusions

- More lessons that student attended in remedial course, the better performance the student obtained in the GE compulsory math subjects.
- Remedial course is useful for students particularly those with lower numerate literacy which are also **confirmed by the feedbacks from both students and lecturers**.
- Analysis of data collected from students contributes to grow evidence that **additional support** from college to students, particularly those students with lower level of numeracy is of prime need and useful.
- Results also give some insight to help college lecturers to **explore multiple ways** to support students by strengthen and/or improving their mathematical ability, their learning in the college and lifelong learning ultimately.

Recommendations and Further Studies

- Educators in tertiary institutions face significant challenges in teaching students, particularly those with lower level of numeracy.
- Additional learning supports in mathematics/statistics are increasingly gaining tertiary institutions' demand in response to the students' needs.
 - Remedial Courses before semester starts or during summer term
 - Revision Lesson before test and examination
 - Reinforcement Hour
 - Study Guide
 - Math Learning Centre