

PROJECT WORK 2018
CATEGORY 4: RESOURCE DEVELOPMENT

Group 4-83

From A Different Perspective

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ABSTRACT

From A Different Perspective is a comprehensive lesson package for teachers to lessen their workload by improving the Mathematics grades of Primary 5 students who are struggling with the subject. The integrated lesson package consists of various resources which have been synthesised to cater to the different learning abilities of the students, and also includes a range of activities which help boost the self-esteem of students thus improving their confidence and helping them overcome their learning difficulties. The package has been modelled after the Primary 5 Mathematics syllabus so as to effectively supplement the topics taught during normal curriculum hours and thus helps the students with their grades and establish a robust foundation for the Primary Schools Leaving Examination (PSLE).

1. INTRODUCTION

1.1. Rationale

The package was developed by working with a group of students who were struggling with Mathematics. They had been recommended to attend our lessons by their respective teachers as they had performed poorly for their Primary 4 examinations. Thus, there was a need to improve their Mathematics grades. Furthermore, the teachers found that the students did not respond well to traditional methods and stated that the students may benefit from approaching the subject from a different perspective.

1.2. Objectives

The main objective of our lesson package is to develop lesson plans for teachers to reduce their workload by catering to the needs of academically weaker students via:

- Creating a friendly and welcoming environment for students that improves their self-esteem and inspires a passion for learning
- Helping them become independent and resilient learners

1.3. Target Audience

The target audience of our lesson package was the academically disadvantaged Primary 5 students at Geylang Methodist School (Primary) and their teachers.

1.4. Product

Our product is a lesson package for teachers which aims to reduce their workload by catering to the needs of academically weaker students who struggle with Mathematics as they do not respond well to traditional teaching methods. This package consists of engaging activities and comprehensive lesson plans which aim to create a friendly and welcoming environment for the students that helps improve their self-esteem and inspires a passion for learning, thereby allowing them to become independent and resilient learners, thus improving their grades.

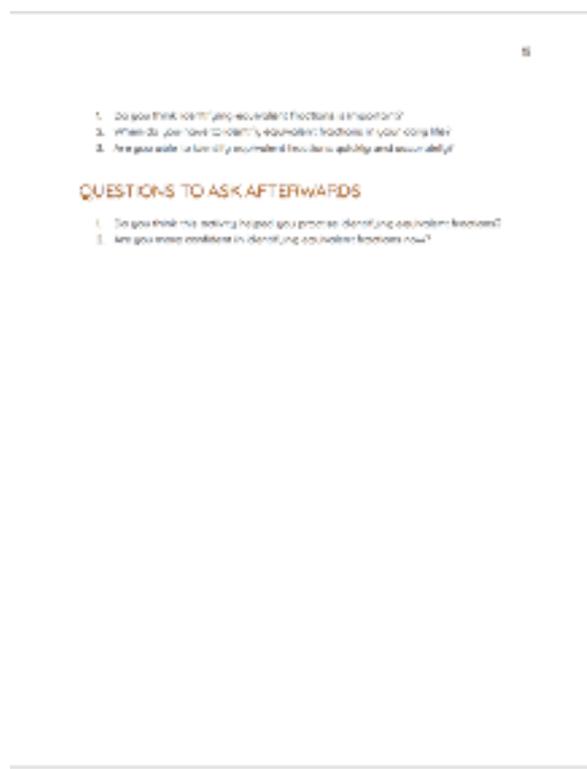
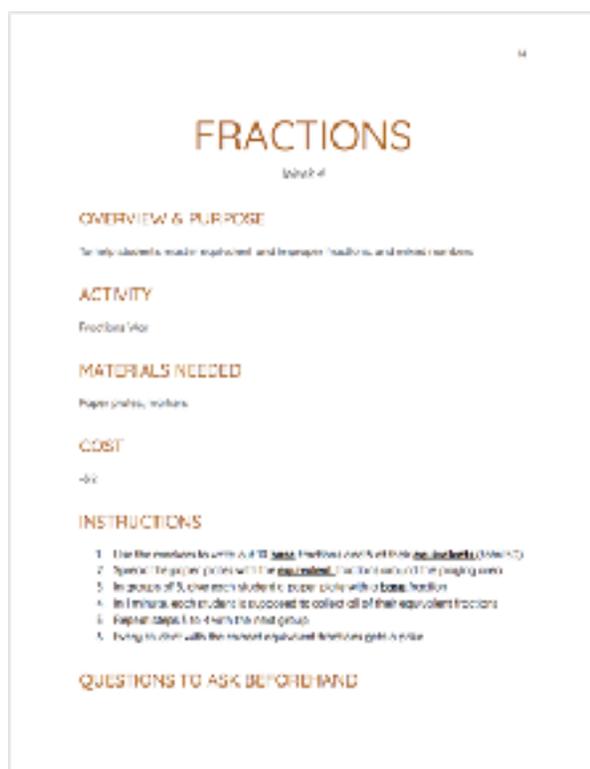
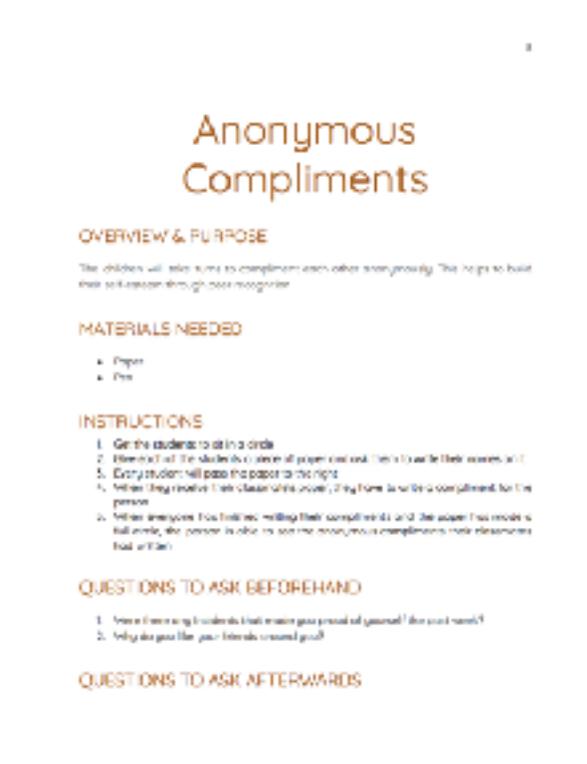
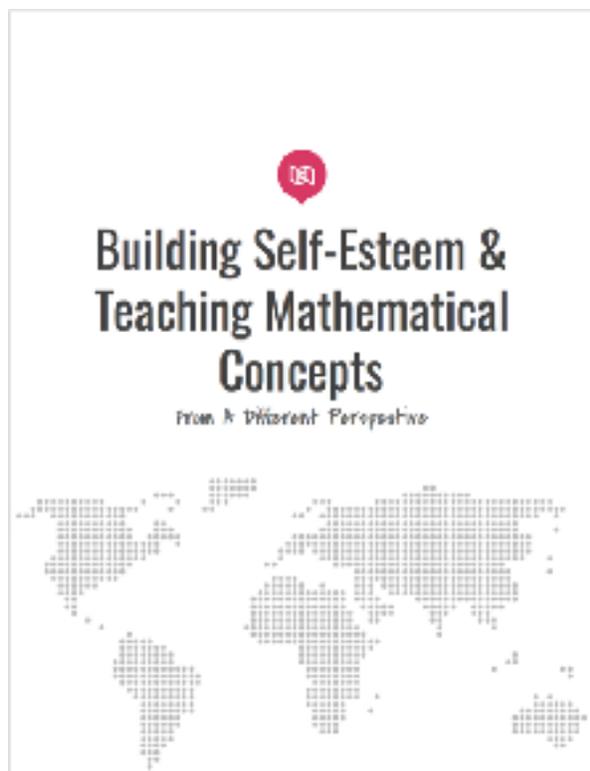


Fig 1.1 Examples of activities from our lesson package

2. LITERATURE REVIEW

2.1. Self-Esteem of Students

Research by Hosogi, Okada, Fuji, Noguchi, and Watanabe (2012) posits that the development of children's self-esteem is heavily influenced by their environment; a student's learning environment in school profoundly impacts their self-esteem. Teo (2018) argues that the stressful learning environment in our education system due to the over-competitive and exam-oriented classroom structure "exerts a cost" on students; detrimentally affecting their self-esteem. Students who lack confidence lose faith in themselves when it comes to their studies as they do not believe that they can succeed (ibid). This, compounded with a lack of motivation and passion to learn translates to increased cases of truancy or neglecting homework, thus causing the students' grades to deteriorate (ibid). In order to improve self-esteem, it is necessary to accumulate a series of positive experiences to "create a positive concept of self" (Hosogi et al., 2012). Therefore, students need a positive learning environment to overcome self-esteem issues, and thereby, be able to learn effectively.

2.2. Workload of Teachers

The education system also causes teachers to experience substantial pressure. Research by Yang (2016) revealed that many ex-teachers cite long working hours and stress due to heavy workloads as the main reason for leaving the teaching force. Teachers claim that their jobs are "too stressful" because of their extensive responsibilities and workload, and this negatively impacts their commitment to their jobs (Yang, 2016). The emotionally-draining nature of this profession has made teachers highly susceptible to burnouts, and the occupational stress that teachers experience ultimately results in poor performance, which adversely affects the students (Wang, Pyun, Koh & Kwon, 2017). Thus, there is an evident need to assist teachers in decreasing their workload so as to relieve their stress and pressure.

2.3. Learning Through Play

Chew (2016) proposes that learning through activities which allow students to play would enhance their learning experience. In his research, he quotes Dr. Robyn Anderson, lecturer for Early Childhood and Education at James Cook University, who says that "play engages children's attention in authentic, hands-on tasks. It offers choice and challenge that is within a child's capacity to master in a stress-free environment". This highlights the benefits of employing a learn-through-play approach to help gain alternative insights on the subject, and hopefully be able to learn in a meaningful and effective manner.

3. METHODOLOGY

3.1. Needs Analysis

Prior to embarking on the project, we conducted a needs analysis which consists of data collection and interviews.

We obtained the Primary 4 Mathematics End-of-Year Examination grades of the students who had been recommended for supplementary lessons by their teachers.

No	Name	Class	P4 Marks	Tel N
1	Mohammad Zulkarnain Bin Mohammad Reedzal	(5-2)	34	
2	Muhammad Altaff s/o Mohamed Hanifa	(5-2)	36	
3	Nor Amirah Binte Nor Azahar	(5-2)	48	
4	Rabiatul Adawia Binte Jefrin	(5-2)	28	
5	Rohith Roshan s/o Mohamed Hamzadkhan	(5-2)	43	
6	Thylis Tay Thio Hui Ning	(5-2)	39	
7	Kayson Chua	(5-5)	53	
8	Ethan Tham	(5-5)	60	
9	Axl Ong	(5-5)	66	
10	Kendrick Tiong Chen Jun	(5-4)	48	
11	Tyra Tan	(5-4)	48	
12	Lim Kai En	(5-4)	51	
13	Hazel Tan Zhi Yi	(5-4)	57	
14	Wong Kok Yik	(5-4)	57	
15	Chia Jia Hui	(5-4)	58	
16	Ler Chang Jun Zhe	(5-4)	58	
17	Lim Zu Yi	(5-4)	58	

Fig. 1.2: Primary 4 EOY Mathematics grades of the students

Evident from Fig. 1.2, there is an evident need to improve the grades of these students as their average mark was 49.5, which is considered as a “fail”.

We also conducted interviews with the teachers at Geylang Methodist Primary School to obtain an understanding of the situation. According to Mr. Chin, the teaching staff “face difficulty catering to the specific individual needs of students”, and they find that “[our] project can effectively meet the needs of the students”. Mrs. Ho, the liaising teacher-in-charge also stated that the students “find it easier to ask questions” during our lessons. Thus, from the interviews that we conducted, we have identified that there is a pressing need for our product.

3.2. Development of Lesson Package

To craft our lesson package, we researched for materials online and obtained various resources which we integrated into our lesson package. We found online games and instructions for various activities, which we then modified to better suit the objectives of our package.

We collated and organised the information and resources we had gathered according to the Ministry of Education's Primary 5 Mathematics syllabus, and included thought-provoking questions after each individual activity as our own value-add to prompt deeper thinking about the specific topic so as to boost the students' learning.

3.3. Pilot Tests

For each individual module of the lesson package, we prepared detailed plans using the resources we had found, which we carried out during weekly sessions on Sunday mornings with the 17 students at the school. Based on their feedback, we made modifications to our plans.

Generally, the students found that the lessons were meaningful, fun and engaging, and were able to achieve the aim of improving their self-esteem. They also agreed that the lessons were able to gain more confidence in handling mathematical concepts. In particular, one of the students, Zu Yi, said:

“It has allowed me to have a better understanding of the fundamentals of mathematics...I was struggling with fractions but now I have sufficiently improved to pass my mathematics...My self-esteem has improved since I started attending this program. I would also like to commend the excellent planning of the program, I hope more students will be able to experience these lessons.”

The teachers have also stated that our lessons were well-prepared, and commended us for building good rapport with the students so that they looked forward to our weekly sessions. In terms of academic standards, the teachers affirmed that our activities were

interesting and able to catch the interest of students in order to boost their confidence in solving mathematical problems.

4. OUTCOME & DISCUSSION

No.	Name	Class	P4 Marks	SA1 Marks
1	Mohammed Zulkamain Bin Mohammed Reedzal	(5-2)	34	38
2	Muhammad Altaff s/o Mohamed Hanifa	(5-2)	36	31
3	Nor Amirah Binte Nor Azahar	(5-2)	48	52
4	Rabiatul Adawia Binte Jefrin	(5-2)	28	33
5	Rohith Roshan s/o Mohamed Hamzackhan	(5-2)	43	44
6	Thyllis Tay Thio Hui Ning	(5-2)	39	45
7	Kayson Chua	(5-5)	53	51
8	Ethan Tham	(5-5)	60	61
9	Azi Ong	(5-5)	66	72
10	Kendrick Tiong Chen Jun	(5-4)	48	53
11	Tyra Tan	(5-4)	48	51
12	Lim Kai En	(5-4)	51	49
13	Hazel Tan Zhi Yi	(5-4)	57	60
14	Wong Kok Yik	(5-4)	57	59
15	Chia Jia Hui	(5-4)	58	63
16	Ler Chang Jun Zhe	(5-4)	58	56
17	Lim Zu Yi	(5-4)	58	67

Fig 1.3 Change in students' grades

Our lesson package was well-received by both the students and teachers, and we were able generally improve the students' grades. Through the process of development, we have made constant improvements to the contents of this package so as to maximise the quality of the product. However, we were limited by logistical issues when we carried out our pilot tests as we were constrained by the resources made available to us, thus we could not carry out a few activities which were more logistically intensive. Although we also found it rather challenging to engage the students as they were unresponsive in the beginning, we were able to circumvent the issue. To improve the product, we could expand our target audience.

5. CONCLUSION

This experience of planning and developing a lesson package was extremely challenging yet eye-opening and enriching. The process was extremely demanding as we had to plan and execute weekly lesson plans amid our hectic schedules. Thus, we required an immense amount of teamwork to help each other out when we some of us were not able to make it for the lessons, and we utilised our individual strengths in planning, organising, and communicating to effectively carry out our lesson plans. Ultimately, our group was able to use our motivation to persevere through the taxing process and produce a product that was of high standards and met our learning objectives.

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