Enhancing Equality in Learning Opportunity:
Develop effective school-based enrichment programmes for
under-achievers with high ability in low social economic status

促進平等學習機會—為才華未展的基層學生製定有效的校本增潤課程計劃

TEACHER'S RESOURCE BOOK

Sharing of Lesson Plans for the
Seed Schools' Enrichment Courses

教師資源冊

種子學校增潤課程教案分享

香港教育大學
The Education University of Hong Kong

特殊學習需要與融合教育中心
Centre for Special Educational Needs and Inclusive Education

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School-based enrichment program for CCC Tam Lee Lai Fun Memorial Secondary School (TLLF)

"Be a professional foodie" -- An English based enrichment Program

Lam Ka Chun Kasey,

Lui Ho Wai Ken, Li Miao Hong Heidi, Kam Wan Man Ava

Background, Theory and Framework

Background and mission of TLLF

The Church of Christ in China Tam Lee Lai Fun Memorial Secondary School (TLLF) was established in 1990. The school has a glorious history of athletic achievement, STEM education and, more recently, inclusive education. The school invests manpower and financial resources generously to engage whole-person development. STEM education, athletics, community service and inclusive education have been the main focus of the school recent years.

The school's mission statement is stated as follow:

> 'In the spirit of Jesus, we aim to help students to unleash their potential, chart their course of life with a rightful mind, self-restraint and good interpersonal relationships which achieve lifelong learning and their transformation into an honourable citizen to contribute their greatness to the community.'

Although the overall academic performance of some students is average, teachers have been reporting the presence of talents every now and then in a particular field, for example, the command of English, sketching, singing and sports. It is believed that

these students may not be academic learner who are potentially gifted in their own domains.

The school formulated three foci to be achieved in 2021-2024:

1. Promoting Self-Regulated Learning (SRL)
2. Nurturing positive school culture
3. Catering for learner diversity

To align the school's foci and respond to the government policy, a school-based pull-out program of a specific domain has been developed for the learners who are potentially gifted students, according to the Education Bureau's 'Three-tier Implementation Model for Gifted Education' (Figure 1, see appendix; EDB, 2021). The territory guidelines suits the local classroom context, in line with the regional curriculum on nurturing 'lifelong and self-directed learning capabilities' (Figure 2, see appendix; EDB, 2021).

Definition of giftedness and underachievement

In terms of the definition of giftedness, Renzulli's Three-Ring Conception of Giftedness (2016) (Figure 3, see appendix) is considered applicable as it enables educators to spot potential students using criteria other than their school results which may not be outstanding. According to the Three-Ring Model, giftedness is defined based on the presence of above-average abilities, task commitment and creativity. Apart from general intellectual ability, creative thinking, leadership ability, visual and performing arts ability, muscular and motor control are also recognised as domains to determine giftedness, which is supported by literature and real educational practice

(Gagne, 2018; Liu & Waller, 2018). Underachievement refers to a discrepancy between expected performance and actual performance (Siegle & McCoach, 2018). Talented students who do not achieve their potential are regarded as underachievers. In this program, we target the English language talented students who do not achieve their potential to develop their talent.

Underachievers in English due to the standardised language exam

Standardised exams are often used at schools to evaluate the academic performance of the students. However, there are always some students who are not good at doing exams. For these students, the standardised exam cannot accurately represent their ability. Previous literature found that English language standardised exams may not reflect what the students learnt in the classroom (Tsai & Tsou, 2009). In Hong Kong, the standardised exam in the English language mainly evaluates students' grammar proficiency and vocabulary. Students who are talented in spoken English may be overlooked when taking standardised exam.

Project-based learning to Motivate students' learning motivation via life-related topic

This program applies project-based learning with writing food reviews as the final product of the project. Project-based learning allows students to gain knowledge by actively exploring challenges in the real world. In this program, students are given a mission to investigate the restaurant and food they like and generate an organised food review to present to their classmates. Using food as the topic of the presentation not only connects daily life into their learning but also drives the students with intrinsic motivation. When students are intrinsically motivated, they can learn by their interest rather than because of external products, pressures, or rewards (Ryan & Deci, 2000). It motivates the students in a positive learning environment.

Building learning community: peer review and group

Group activities and peer reviews will be initiated into the program to build a sense of community. In every lesson, students will be divided into groups and work together. At the end of the program, the teacher will invite students to grade their peer's work. The teacher will also encourage students by giving praises and positive comments regarding their effort paid in the program. By reviewing peers' work, the student would learn to reflect, appreciate, and evaluate their own/peer's learning outcome. It also provides an opportunity for students to have interaction and discussion when giving feedback. Research suggested that students' confidence and creativity can be improved through peer reviewing (Falchikov, 1988).

Program goals

This school-based, pull-out program aims to stimulate the individual interests of junior form students who show giftedness in their command of English (spoken or written) in the practical, authentic, and advanced usage of the language to communicate with the school community in a real-life context, which develops self-awareness, personal strengths, and social responsibilities beyond their regular school program to become a responsible citizen as well as a rightful netizen in the 21st century.

1. To advance the students' level of command in English (specific learning goals refer to the lesson plans in "program content")

   Write and refine a food review for grading with the target language by process writing.

2. To foster a positive learning environment among students

Collaborate with peers to discover and appreciate each other's work.

3. To build self-confidence within individuals

   Boost students' self-efficacy through literal interaction with peers and the school community.

Evaluation

A pre-test will be conducted at the beginning of the first lesson to assess the preliminary English capability of the students regarding the writing of a food review. It is a 15-minute paper test covering four areas taught in the course: the content, language, organisation, and features. These four areas refer to the assessment rubric of the Hong Kong Territory-wide School Assessment on writing.

A post-test of a similar setting will be conducted at the final lesson to assess the amount of course content the students have mastered. It is expected that students will be able to attain a higher score after the program. Besides, focus groups will be conducted jointly with The Education University of Hong Kong to assess the program's overall quality. Students will also be given questionnaires to comment on the teacher's performance.

Selection Criteria

The selection criteria follow two manuals released by the authorities with regards to the twice-exceptional and gifted underachievers.

To be eligible for the program, a student must:

- be a junior form (Form One, Two or Three) student; AND

- be the top 10% (Gange, 2010) candidates of the English entry exam (F1) / term exam (F2-F3); OR
- did not show outstanding ability in English exam but evidently demonstrated exceptional English ability through non-academic means (e.g. Speech Festival, drama performance); OR
- evidently demonstrated strong motivation in learning or applying the English language; OR
- evidently exhibit potential in advanced English learning despite underachievement. For example, being a frequent viewer of Netflix or a fan of the Narnia chronicles is acceptable proof. The exam scores and school performance are not the only consideration.

The program embraces inclusiveness where special educational needs will not be a factor of selection.

To enroll, a student can:

A. apply directly through his/ her English teachers

B. be nominated by his/ her English teachers

Program Content

This program contains 10 learning hours, including 5 teaching hours (in 5 lessons, 1 hour each) and 5 study hours (1 hour for assignments after each lesson). The overview of lessons is shown below:

Name	Be a professional foodie! 英文食評寫作班
Nature	School-based pull-out program with a specific focus in the use of English

Class size	10 pupils from Form 3
Duration	1 teaching hour every Monday after school, 5 lessons (total 5 teaching hours) and 5 studying hours after class, total 10 hours.
Class date	November-December 2021

Lesson	Activities (T: Teacher / S: Students)	Learning Goal(s)	Learning Materials
Lesson 1 Introduction (Pre-test) (50 mins)	**Topic: "What makes an excellent food review?"** 1. <u>Start of the course (10 mins)</u> • T presents two video clips in which the hosts comment on the food. • T introduces the objective of the program - to write and refine a 150-word food review regarding their favourite restaurant. 2. <u>Introducing a Food Review as a text type (5 mins)</u> • T asks S for ideas of famous food review platforms on the Internet, introducing Openrice.com and TripAdvisor.com as two examples. • T distributes the class logbook containing key readings as the textbook of the program.	<u>Language:</u> (1) display existing ability in the pre-test (2) identify the features of an online food review (3) draft a 150-word food review by commenting on 3 food items from a restaurant of their choice <u>Non-academic:</u> (1) identify the objectives of the task (2) understand the diversity of writing style and contents	1. Class logbook (comprised of food reviews from Openrice.com) 2. T's PPT 3. Lesson 1 S's PPT notes 4. YouTube videos

	<u>Activity 1: Food review (20mins)</u> • S are split into pairs, read about food reviews posted on OpenRice.com, a local restaurant rating forum. • S have to pick the best, and the worst food review in pairs. • S gather their ideas and explain what means by a good or a bad review. • T evaluates their reasons and summarise the elements of a food review, i.e. informative, useful and persuasive. 3. <u>Pre-test (15 mins)</u> • S will be asked to finish a worksheet as the pre-test at the end of the introductory lesson. <u>Homework (60 mins):</u> **<u>Draft</u>** • Imitating the flow of one of the good example discussed in the logbook, **draft** a short food review of 150 words with three chosen food items from their favourite restaurant. • The draft should be turned in in two days.		

Lesson 2 Contents (Vocab & Aspects) (60 mins)	**Topic: "How to describe food and the restaurant?"** 1. <u>Introduction (5 mins)</u> • Review the 1st lesson - the elements of a good food review. • Overview the objective of the 2nd lesson. 2. <u>Describing food (10mins)</u> • T asks S to describe a steak and the 'Sichuan Boiled Fish'. • T introduces the aspects to describe food, flavours, aroma, colour, texture and size (F.A.C.T.S.). S read aloud the words together with T, and fill in the blanks on their class notes. *<u>Activity 1: Blindfold game (20 mins)</u>* • T introduces the rules. 1. Two to three teams will compete side by side; 2. Each team consists of two members, A and B; 3. A is the taster and B is the helper; 4. A is blindfolded and seated; 5. B gets a food item from T 6. T will start the timer; 7. In ONE minute, B feeds A the food, and A has to describe it to B. 8. A has to describe it in English.	<u>Language:</u> (1) Match the correct vocabulary to describe food texture and taste; (2) Use accurate, descriptive words on food items and restaurant atmosphere. <u>Non-academic:</u> (1) Present opinions to a restaurant besides food items (e.g. atmosphere, interior design and service)	1. Class logbook (comprised of food reviews from Openrice.com) 2. T's PPT 3. Lesson 2 S's PPT notes 4. Blindfolds 5. Packaged snacks 6. Marked Draft food review 7. YouTube videos

	9. B has to spell the words on the blackboard. 10. When time is up, T will count the valid answers. The team with the most valid answers wins. 11. The game will be played twice to find out the final winners. 12. The final winners can choose any snacks they want from a variety of selection. 3. <u>Describing a restaurant (10mins)</u> • T presents a few pictures and a video and asks S to describe them. • By questioning S, T introduces other aspects, such as atmosphere, service and room size, which should be included in an informative, sophisticated food review. • T introduces strong descriptive words (e.g. excellent, good, ordinary, bad, appalling) to S. S read aloud the words with T. *<u>Activity 2: Food review evaluation (15 mins)</u>* • In pairs, S read a few food reviews extracted from their logbook. They need to check the aspects if they are present in the writing.		

	T will check the answers with them. Homework (60 mins): **Rewriting 1 (R1)** • S are be given their marked draft. They are asked to add the description of the restaurant using the aspects explored in the lesson. The R1 should be submitted in two days.		
Lesson 3 Organisation & Features (Vocab & Aspects) (60 mins)	**Topic: "How to arrange the contents neatly yet professionally?"** 1. Introduction *Activity 1: Food review evaluation (15 mins)* • S read their peers' R1. They need to give comments and write down the key points they read from their peer's work, e.g. the name of the restaurant, the food items, the elements included. 2. Order of events (10 mins) • T asks S for the sequencing method most familiar to them, i.e. First, secondly, then, finally. • T shows a video of a 5-course meal and tells S their writing could be arranged without the time words but the flow of a meal, i.e. from starter, main course, to dessert.	Language: (1) identify the organisation of food reviews (2) recognise the acceptable use of pictures and colloquial language in a food review (3) rewrite 2nd draft without using 'first', 'then', 'next', 'finally' and the other explicit, common sequencers. (4) add personal style into the 3rd draft by adding colloquial language	1. Class logbook (comprised of food reviews from Openrice.com) 2. T's PPT 3. Lesson 3 S's PPT notes 4. YouTube videos 5. Organizational analysis worksheet 6. Peer review forms

	Readers find it natural to read. *<u>Activity 1: Structural analysis (20 mins)</u>* • In pairs, S need to analyse the organization of an assigned food review on an evaluation form. They have to check the aspects present and number them into order. Finally, they need to grade the organization of the food review (0-5 stars). • S present their answers to T and give reasons according to their form. • T rounds up by showing a 5-stage organizational chart of a food review including an opening and a closing which mention the restaurant before and after the paragraphs about food. 3. <u>Informalities</u> • T asks S to do Activity 2. *<u>Activity 2: Proofreading (15 mins)</u>* • S need to spot out the grammatical mistakes from an assigned reading in pairs. • At the end of the activity, T points out that the grammatical mistakes have been screened by the T and	<u>Non-academic:</u> (1) recognise the subtle flow of a text by immersing oneself within the writing (2) select a writing style which suits themselves	

	are allowed not to be corrected to imply it is common to accept flaws in a writing. T stresses that the mistakes must not deter meanings, otherwise they must be corrected. • T points out S are welcome to add emojis into their writing to build emotional linkage with their readers. • T points out S should add pictures to their writing to make it attractive to readers. <u>Homework (60 mins)</u>: **R2** • S are given back their R1. They need to fix some grammatical mistakes, add and re-organise their contents, and include 3-5 pictures of the food items and the restaurant. R2 should be submitted in two days electronically.		
Lesson 4 Language (Grammar & Relative Clauses) (60 mins)	**Topic: "How to reduce errors and add meanings into a sentence?"** 1. <u>Introduction of Lesson 4 (5 mins)</u> • T stresses that though minor mistakes may be accepted, it is crucial not to make mistakes that confuse readers. *<u>Activity 1: Error detection (10-15 mins)</u>*	<u>Language:</u> (1) identify the correct tense to describe facts and experience by detecting errors from a poorly written passage;	1. Class logbook (comprised of food reviews from Openrice.com) 2. T's PPT 3. Lesson 4 S's PPT notes 4. Complex sentences worksheet

	• S are given a poorly written sample to detect the grammatical errors in tenses in pairs. • S present their answers to T. • T stresses the importance of tense 2. <u>Relative clause</u> <u>Introducing relative clauses (5-10 mins)</u> • T extracts a few sentences with relative clauses from the logbook to see if S understands the meaning of them. • e.g. *I ordered the sushi set which is very fresh and delicious.* • T reduces the examples one by one, from a 'complex sentence', into a 'compound sentence', and finally into two 'simple sentences. *e.g.* *(Lv3) I ordered the sushi set which is very fresh and delicious.* *(Lv2) I ordered the sushi set and it is very fresh and delicious.* *(Lv1) I ordered the sushi set. It is very fresh and delicious.* • S jot down the key changes onto their classnotes. (Fill-in-the-blank)	(2) reduce a complex sentence into simple sentences; (3) condense simple sentences into a complex sentence using relative clauses; (4) use participles to shorten a complex sentence. Non-academic: (1) work with teammates to achieve the goal.	

	<u>Activity 2: Spotting out (5-10 mins)</u> • In pairs, S have to highlight the sentence with a relative clause from a selection of reading from the logbook. *<u>Activity 3: Sentence-making (10-20 mins)</u>* • After checking the answers with T, S are given a list of questions with complex sentences and simple sentences. In pairs, they need to reduce each of the complex ones into two simple ones, or the reverse. *** In case of confusion, T is advised to use a table to show the reduction steps from a complex sentence to simple sentences. Depends on students' ability, steps can be skipped or fully displayed.** *<u>EXTENSION for more-abled S</u>* *Halve the time of teaching part a) and b) to accommodate the parts below.* 3. <u>Participles (5 mins)</u> • T points out the technique to further simplify a relative clause by making an active (gerund) or a passive (pp) subordinate clause.		

	• T extracts examples from the logbook to show S the condensed relative clause. e.g. *1) We had Ox tongue **stewed** in a clay pot.* *2) This is a family style restaurant **serving** Ukrainian food.* • T explains the function and difference of the participles, where the past participle can shorten a relative clause in passive voice, so do the present participle but in active voice. 4. <u>Guided exercise (10 mins)</u> • T illustrates to S how to reduce a condensed complex sentence into a regular complex sentence. e.g. *(Lv4) We had the pork ribs marinated in volka and honey.* → *(We had the pork ribs ~~which is~~ marinated in volka and honey.)* *(Lv3) We had the pork ribs which is marinated in volka and honey.* • While teaching present participles, T points out explicitly the –ing must be crossed out from the sentence after reduction. e.g.		

	(Lv4) This is a family style restaurant serving Ukrainian food. → *(This is a family style restaurant ~~which~~ *serving Ukrainian food.)* *(Lv3) This is a family style restaurant which serves Ukrainian food.* *<u>Activity 4: Back-to-simple exercise (10mins)</u>* • S are given a list of sentences with a regular relative clause. They need to shorten a complex sentence by using the present or the past participle. • T checks answers with S. • T recaps the key points of using participles. <u>Homework (60 mins)</u>: **<u>R3</u>** • S are given back their R3. They need to fix some grammatical mistakes, join sentences with relative clauses, use participles to shorten relative clauses in some cases, and prepare to read aloud their work in front of the class. R3 should be submitted in two days electronically. • When marking R2, T should label sentences which can be made into a complex		

	sentence with relative clauses. It reduces the difficulty of the task. <u>Homework (60 mins):</u> **<u>Presentation</u>** • S need to prepare a 3-min presentation to their peers. They may choose to design their own PPT slide or ask T for help.		
Lesson 5 Presentation (65 mins)	**Topic: "Who's the Best Foodie among us?"** 1. <u>Introduction (5 mins)</u> • Before lesson, T decorates the blackboard with colourful chalks and post each S's final work (from R3) in a row with even spacing on the blackboard. Ensure the overall display is visually attractive. • T introduces the flow of the lesson. • The lesson will start from S's individual presentation, then a voting, a prize-giving ceremony, a photo-taking session, and the post-test. 2. <u>Presentation (30mins)</u> • T introduces three awards: (recommended awards) 1) Best Presenter, who gave the clearest presentation;	Language: (1) present their food review orally with basic greeting and gesture (2) demonstrate the language learnt in the program in a post-test Non-academic: (1) present their food review confidently in an organised manner (2) appreciate the work of others through an evaluation rubric for an excellent food review	1. Class logbook (comprised of food reviews from Openrice.com) 2. T's PPT 3. Lesson 5 S's PPT notes 4. Color-printed Students' work 5. Blackboard and chalks and blu-tack 6. Colourful stickers for voting ***notes to T:*** - T should have collected and marked S's R3. - For presentation, the PPT slide can be made by T or the S. It's recommended to keep the logistics simple for initial

	2) Best Foodie, who wrote an excellent food review; 3) Best Designer, who made the most appealing food review. • One by one, S spend 3 minutes to give a short speech introducing their favourite restaurant using their R3 as a script, with pictures on the screen. • T leads S to applaud at the end of each presentation. ***T may offer short, encouraging compliments to each presenter after their speech.** **e.g. Well done, excellent, I like your voice, etc.** 3. <u>Peer evaluation (10 mins)</u> • Each S receives 3 kinds of stickers from T. T asks S to come out from their seats and cast their vote **directly on** their peers' work. They need to choose the: 1) Best Presenter with an 'speaker' sticker; 2) Best Foodie with a 'star' sticker; 3) Best Designer with a 'paintbrush' sticker. • S are allowed to move around to read the exhibiting food reviews of their peers before casting their		adoption of this lesson plan. - Ensure S have prior knowledge of designing PPT slide for presentation before asking them to do so.

	votes (putting stickers on the exhibits). • T reminds S to grade the writing according to the criteria of a good review learnt in Lesson 1, i.e. usefulness, informativeness, and persuasiveness. • T times the voting process and prompts S to cast their votes within the time limit. S should be seated after all the voting. 4. <u>Prize-giving & photo-taking (5 mins)</u> • T announces the results and leads a round applause to the winners. T takes pictures with the winners. T invites all S to take group photos together. • T summarises the program by showing the gist of Lesson 1 to 4 on the screen. • T concludes the program and thanks S's participation. 5. <u>Post-test (15 mins)</u> • T asks S to finish a post-test to evaluate their learning outcomes in the program.		
THE END			

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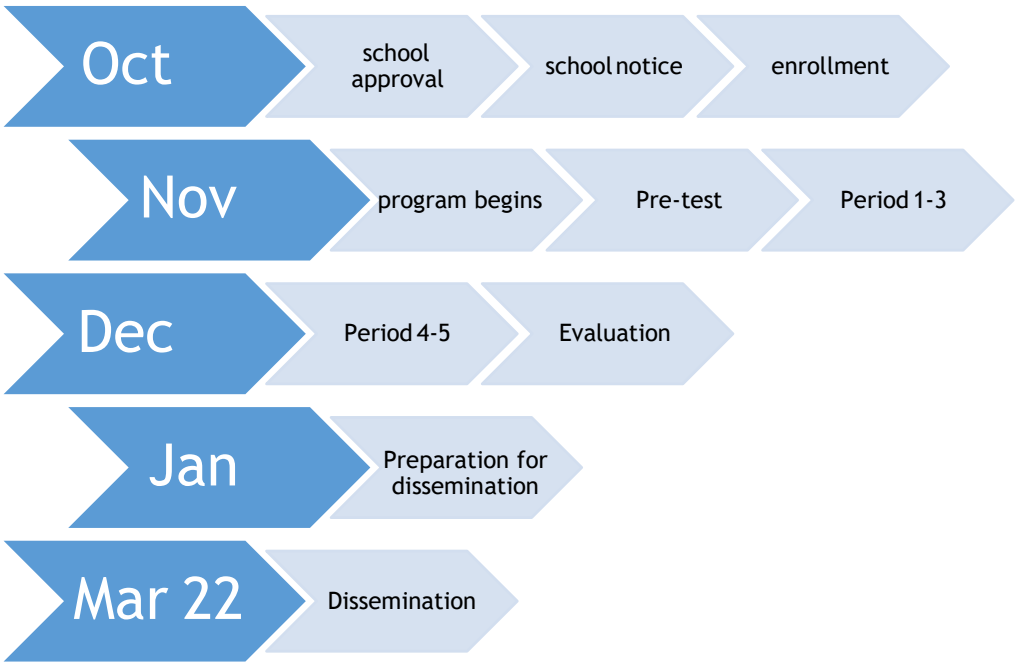
Appendix

Program timetable:



Program Team:

Seed Teacher: Lam Ka Chun, Kasey

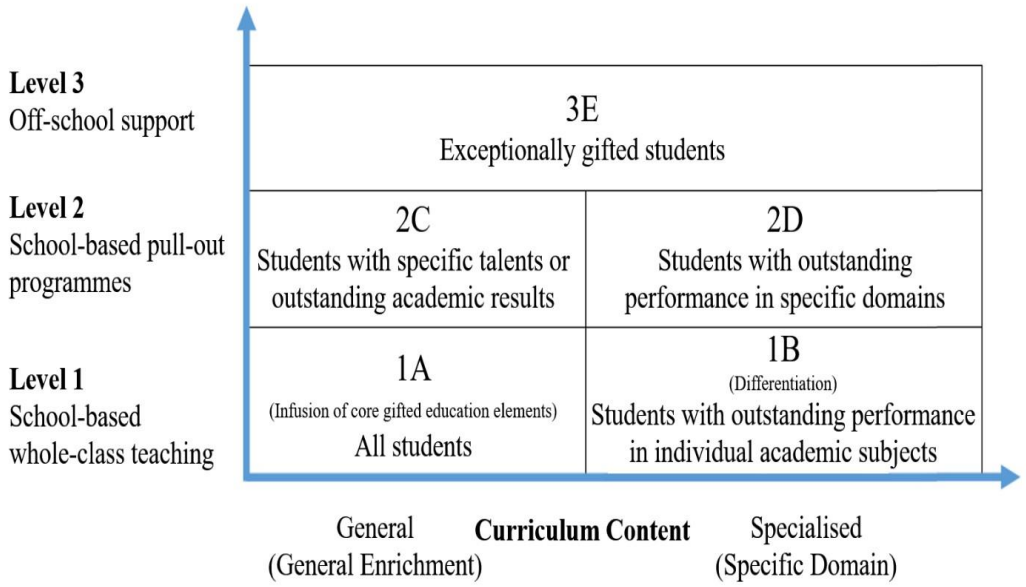
Partner Teacher: Jessica Lee

Network Teacher: Rebecca Chan

Implementation of Gifted Education in Hong Kong

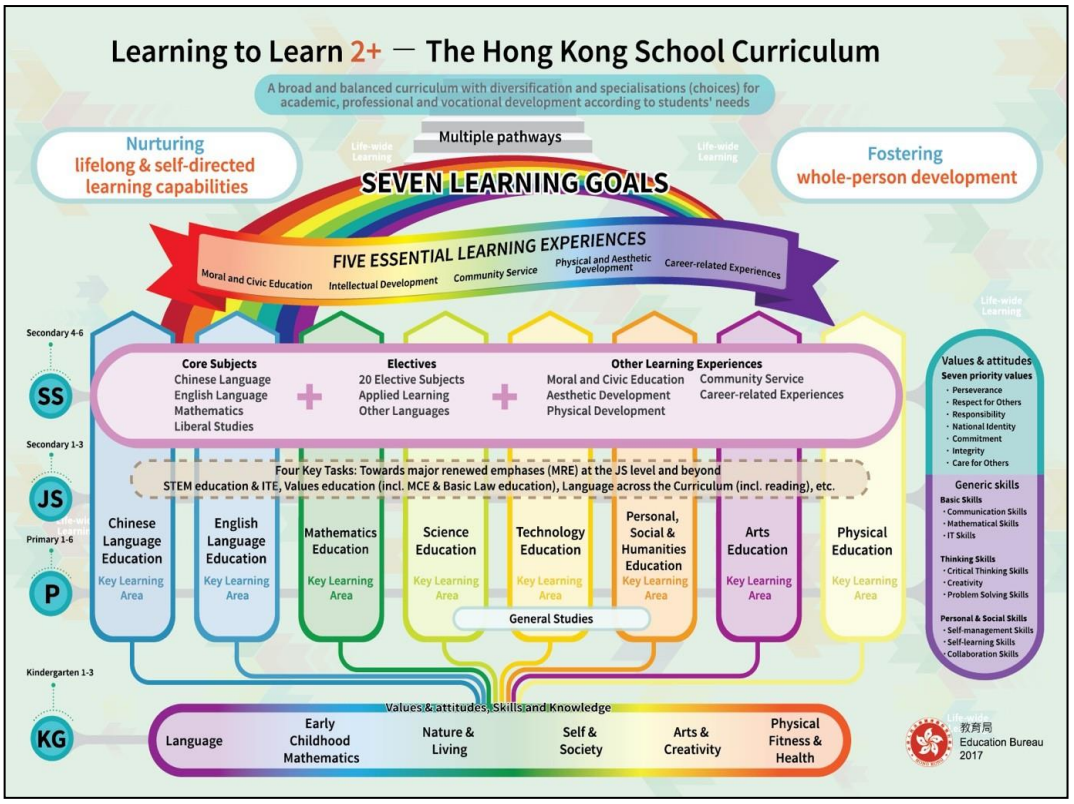
The Education Bureau encourages schools to adopt the "Three-Tier Implementation Model" to plan and implement their school-based gifted education. The core elements advocated in gifted education, i.e. higher-order thinking skills, creativity and personal-social competence should also be immersed in whole-school curriculum planning of Level 1 and 2.

The Three-tier Implementation Model for Gifted Education

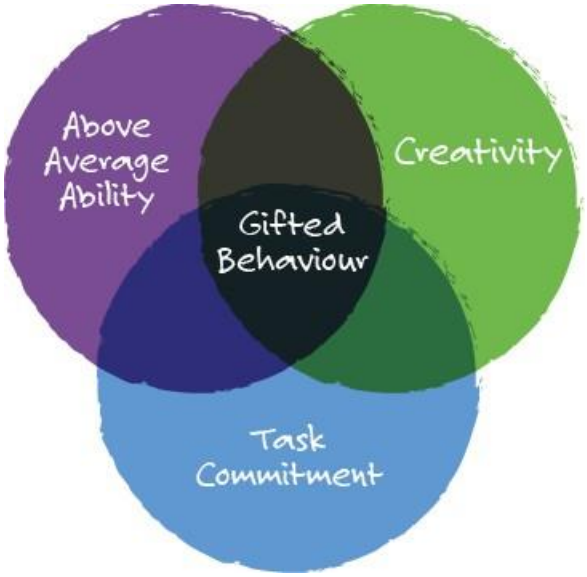


(a) Level 1 refers to using pedagogies that could tap the potential of students in creativity, critical thinking, problem solving or leadership, etc. in the regular classroom;
(b) Level 2 refers to offering pull-out programmes in disciplinary or interdisciplinary areas for the more able students within the school setting; and
(c) Level 3 refers to provision of learning opportunities for the exceptionally gifted students in the form of specialist training outside the school setting.

(Figure 1. The Three-tier Implementation Model for Gifted Education, HKSAR)



(Figure 2. The Hong Kong School Curriculum)



(Figure 3. Renzulli's Three-Ring Conception of Giftedness.)

School based enrichment program for Chinese YMCA College

Secondary Science Enrichment Program— "Be a Scientist!"

Cheung Tsz Yan

Lui Ho Wai, Ken, Li Miao Hong Heidi, Kam Wan Man Ava

Background, Theory and Framework

Underdeveloped talent in sciences under standardised exam

Standardised exam is one of the most common tools in evaluating the students' learning outcome at school. However, whether the standardised exam can truly reflect students' ability remain controversial. Wiliam (1996) suggested that students' performances in the standardised exam do not necessarily equal what the students can do in real-life tasks. Students who are talented in science can be underachieved with the standardised exam for different reasons. For the exam, the language of instruction was found to be a reason for students scoring low in the standardised exam (Abedi, J, 2002). The standardised exam also does not encourage the type of teaching that holds the potential to address the learning needs of underachieving students (Aydeniz & Southerland, 2012). Therefore, students who are highly motivated and interested in science will also be invited to this project despite their low academic performance.

Self-Determination Theory

In our school, which serves secondary students, we will adopt the framework of self-determination theory for the program mission. The components of Self-determination theory (Cook & Artino Jr, 2016) includes competence (to be able to master more difficult subject topics), autonomy (to have choices in the learning process) and

relatedness(topics related to their daily life or personal interests). The program will provide innovative, research (Competence*) and problem-based learning (Relatedness*) experiences to the high-ability students while research-based learning allows students to master the difficult subject topic and problem-based learning connect the subject topic to real life. It will also promote the student's creativity and scientific mindset through better understanding and innovative application (Autonomy*) of science and technology. Students have the choice to use their creative ideas for social innovation. Besides, our school's students are mostly from the grass-roots level. They usually do not have many resources or platforms for them to learn. Thus, the current program allows students to learn in an innovative way under the self-determination framework, promoting students' motivation to learn.

Theory of Psychosocial Development

At teenage, adolescents are experiencing the identity crisis in which they are finding their identity and forming their self-image (Erikson, 1950). Issues of trust, initiative and autonomy are often found in this physiological stage. While self-determination theory allows students (and the high-ability students) to build up their sense of success and enhance learning motivation, this enrichment program applies self-determination theory also to enhance high-ability students to learn and find out their identity.

Research-based learning

Research-based learning is the teaching method that links research activities with teaching to promote and develop student competencies related to research practice (Varnhagen et al., 2010). It also allows students to develop analysis, reflection, and argumentation skills and foster understanding of the current topic. At the end of the program, students will be invited to join the public Science competition under the

topic of “Sustainable living” in teams. Students will deliver innovations based on their previous research to their creativity and scientific mindset.

Problem-based activities

This program also adopts problem-based activities in learning. Students will be given the goal of utilising and managing natural resources for a sustainable future and maintaining a sustainable environment. By solving the real-world problem in learning, students can have more hands-on experiences in learning competent topics and relate the knowledge to daily life. It also matches the relatedness component in the self-determination theory to motivate the students.

Program goals

I. To enhance and enrich students’ scientific knowledge and mindset.

II. To promote autonomy for students to learn.

III. To evaluate student’s chosen topics and provide feedback.

IV. To set up an inner school platform for the students to present their work

V. To participate the public Science competition

Evaluation

Learning Goals	Results and delivery
I	All participated students will join the program to learn more difficult topics (extracted from secondary 2 and 3's Science curriculum) related to sustainable science. The topics include, energy, electricity, water etc. During the courses, students will participate in different hands-on and problem-based activities to learn the topics instead of direct teaching. These activities allow students to be more creative and develop their scientific mindset by undergoing the scientific investigation process. Then, after learning the several topics, teacher will assess students' learning outcomes, a written test to differentiate students into groups for further learning. (>80% marks, practitioner, 70-50% apprentice, 49% or less, novice)
II	Teacher will arrange students into their own groups (practitioner, apprentice and novice). Then, students will be asked to think about a topic related to sustainable future and start their own research. Teacher will provide more guidance to the apprentice and novice groups in choosing the topics. Each group should come out an idea in the lesson and present it in front of the class. Students could learn about each other's topic and provide comments.

III	Teacher will comment on the students' chosen topics and provide feedback for each group. For the novice and apprentice, teacher will provide them with more guidance. If the students' topic is not fit for the theme, teacher will ask student to re-think. Each group need to hand in their idea plan by the end of the week and meet with the teacher respectively for at least three times (up to 20 mins each) to evaluate the plan before the final one.
IV	Each group will start their work with teacher's guidance and supervision (as some plan may involve using electricity or require adult monitoring). Then students will be asked to test their work/model, by engineering process, students need to retest the work for modification. Then, teacher will ask the 3 groups to present their work by taking a video and show it to all students in the school during assembly.
V	The 3 groups will be formed as 3 teams, with their own innovations to join the public Science competition. In the competition, the teams will need to present again their work and submit the task. There will be different workshops for the participants to join to enhance their science knowledge. Teacher will monitor the process and evaluate the results with the teams after the competition. It is also a chance for students to see other schools' innovations, which enrich their experiences in learning science.

Selective Criteria

a. Secondary 1 or 2 students: they are new to the secondary school and the less academic burden compared to other forms of students. Also, it is good to let the new comers to experience more so as to allow them to find what their interest is earlier, and;

b. Good Science test result: Around 80% or higher for the marks from the recent test, this is to ensure that students are at least motivated to learn and get some basic knowledge about science and/or;

c. Underachiever in science subject: some high-ability students may be underachievers, so test results is the only criteria that considered. In order to include the underachiever in sciences to be able to join our program, if students demonstrate high interests during Science class (by teacher's observation or nomination), they are also welcome to join as passion also drive the motivation to learn, and;

d. With parents' approval: as the classes are arranged after school, so students need to be free to join with parents' approval. Also, some parents may worry that joining extra classes may affect student's regular learning. So teacher needs to explain clearly to the parents that this is an enrichment class for promoting science learning.

Program Content

This program contains 20 learning hours, including 9 teaching hours, (in 6 lessons, 1.5 hours each), 6 study hours (1 hours for assignment after each lesson), and 5 hours for prepare and joining the competition. The overview of lessons is shown in below:

Lesson	Activities	Leaning Goal(s)
1 (90 mins)	Theme: Electricity 1. <u>Pre-test (15mins)</u> • Students will have a science written test based on the topic of electricity and energy 2. <u>Basic information about electricity(20mins)</u> • Definition of "electricity • Introduce the conditions needed for electricity to flow and electric current to students • Experiment with electricity and conductors: (a) teacher will provide students a set of materials (electrical insulators and conductors will also be included) (b) students identify the electrical conductors through experiment 3. <u>Circuit (20mins)</u> • Question for students: why the phones can be charged? • Students watch the video about circuit theory (https://www.youtube.com/watch?v=j0zf-otH3cY) and teacher will ask relevant questions, then will explain more on how an electrical circuit works • Introduce the differences between series circuits and parallel circuits 4. <u>Experiment with circuit (25mins)</u> • Provide instruction of the experiment: students need to change the components in the electrical circuit and write down the results • Students will be formed as group and teacher will distribute the materials • Instruct students to predict the results and draft the circuit diagrams • Students change the components and the length of circuits for testing • Students will mark down and present the results	1. To enhance and enrich students' scientific knowledge on the topic of electricity and circuit. 2. To predict and evaluate the results of changed components in the electrical circuit through hand-on experiment 3. To develop students' critical thinking through evaluating the results from the experiment

	5. Debriefing (10mins) • To conclude the lesson • Feedback from teachers based on their experiment performance • Students need to fill in the worksheet for self-evaluation and reflection	
2 (90 mins)	Theme: Water 1. Revision (5mins) • Students will be asked 3 questions based on the topic of electricity 2. Introduction of water pollution (10mins) • Introduce the background information of water pollution 3. Introduction water distillation(20mins) • Introduce the impurities in natural water • Introduce the process involved in water distillation by watch the video and teachers' explanation https://www.youtube.com/watch?v=V5ep0-ojPGw 4. Making a model of distiller (45mins) • Students will form into groups • Teacher will explain the process of making the model of distiller and distribute the material • Students discuss in group and design the model of a distiller • Testing the distiller model and modify their work • Present their observation during experiment • Teacher will guide the students to discuss the results 5. Debriefing (10mins) • Students need to fill in the worksheet for self-evaluation and reflection	1. To enhance and enrich students' scientific knowledge on the topic about water. 2. To develop students' critical thinking through carrying out the experiment and evaluating the results from the experiment

3 (90 mins)	Theme: Research skills & Plan for the topics 1. <u>Revision (10mins)</u> • Students will be asked 5 questions on the topics of electricity and water 2. <u>Students plan for their research and design project (40mins)</u> • Students will be divided into 3 groups (practitioner, apprentice and novice) • Students will be asked to think about a topic related to sustainable future • Students set the assignment goal and objectives • Teachers provide more guidance to the apprentice and novice groups • Each group come up with an idea and present it in front of the class • Students finish the peer evaluation form and provide comments on each other's topics 3. <u>Introduction of research resources (15mins)</u> • Question: What resource will you use for research? • Introduce the research resources: books (printed and e-version), journals, newspaper (e.g WiseNews), Google scholar and Google books. • Remind students to verify information from several sources 4. <u>Introduction of research skill: board to specifics (15mins)</u> • Question: how to find relevant information when we are facing problems during the model development or to support our stance? • Guide students to find the relevant information by using an example topic (narrowing down the keywords for searching) • Practice: Provide a topic to students and they should provide the keywords for searching information	1. To identify difference resources for searching information 2. To enhance students' research skills 3. To promote autonomy for students to learn

	5. <u>Debriefing (10mins)</u> • Students need to fill in the worksheet for self-evaluation and reflection	
4 (90 mins)	Theme: Develop the model and test the work 1. <u>Start to develop their model (70mins)</u> • Students in groups will start to develop their model based on their design • Teacher will guide and supervise the students during the designing period 2. <u>Discussion on each group's model (10mins)</u> • Students fill in the peer assessment form based on the initial version of their work and provide feedback for them 3. <u>Debriefing (10mins)</u>	1. To develop students' problem-solving skills through testing the model
5 (90 mins)	Theme: Test and modify the model 1. <u>Test the model (25mins)</u> • Each group will test their work after the development. • Each group will have a brief introduction and they will show their work to other's group 2. <u>Discussion (25mins)</u> • Students discuss the difficulties they faced during testing and come up with the solution together with teacher and other classmates • Students from each group need to give feedback to students after testing the model • Teacher will evaluate students' work and provide feedback to students 3. <u>Modification of the model (30mins)</u> • Students will modify their model based on the feedback from teacher and classmates 4. <u>Debriefing (10mins)</u> • Students need to fill in the worksheet for self-evaluation and reflection	1. To develop students' problem-solving skills through testing the model
6 (90 mins)	Theme: Presentation of their work 1. <u>Students in groups will present their work (50mins)</u>	1. To enhance students' confident in

	• Students present their work in front of the class • Teacher will record the presentation and the video will show to all students in the school during assembly 2. <u>Discussion (25mins)</u> • students fill in the peer evaluation form and give comments to their peer • Teachers will evaluate students' work and provide feedback to students 3. <u>Debriefing (15mins)</u> • To summarize the project • To evaluate how much can students gain from the programme	public speaking through presentation 2. To appreciate each other's work
7 (90 mins)	Theme: Science Competition and Evaluation 1. <u>Students will be formed as 3 teams and they will join the public Science competition</u> • Each team will submit and present their work in the competition 2. <u>Debriefing</u> • Evaluate the results with students • Evaluate the overall performance with students to understand the effectiveness of the programme • Students need to fill in the evaluation form about the programme 3. <u>Post-test (20mins)</u>	1. To develop students' critical thinking skills through evaluating their and others' teams performance 2. To learn from others' innovations

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School based enrichment program for Fung Kai No.1 Primary School

"FK Youtuber" – An English and IT enrichment programme

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Background, Theory and Framework

Differentiated Model of Giftedness and Talent (DMGT)

The Differentiated Model of Giftedness and Talent (DMGT) by Gagne (2010) is used in this program to match our school missions towards students. DMGT is a model which summarises the transformation of the talent development process (P) from outstanding natural abilities or gifts (G) into outstanding competencies or talent (T). It is believed that every student has their unique natural abilities, and they can be developed into talents by environmental factors (E) and intrapersonal factors (I). FK Youtuber is an enrichment program for students to develop further the use of language (English) and skills of information technology. Creativity, problem-solving skills as well as students' motivation in learning will also be nurtured in the program. By providing environmental inputs in the developmental process, students can develop competencies including technology, arts, social service etc.

On the other hand, cognitive approaches for studying information processing can also be applied to tasks with series problems, nurturing students' problem-solving skills (Sternberg,1977). It is expected that after the program, students will be able to create their own video with meaningful content by using English as the language media. The

"YouTuber" here refers to the video makers and does not imply to develop the students to set up a YouTube Channel and become a YouTuber.

Underrepresented talents due to the standardized exam

Standardised exam is often used at schools to evaluate students' academic performance. However, highly creative students also struggle with standardised exams since they have to figure out convergent answers in the standardised exam (Pllana, 2019). The standardized exam requires analytical skills but do not assess creative skills, practical skills, or wisdom-based ethical skills (Isenberg, 2015). Many gifted students in creative, social and perceptual domains are underachieved because their gifts are not seen with the standardised exam. Our schools put great efforts into creating a healthy learning environment to peak students' potential in multiple aspects. Science, Technology Engineering, and Mathematics (STEM) education are one of the largest student development paths in our school. However, the selection of students to those programs often depends on their academic performance. Since high intelligence is commonly assessed through IQ tests (Dai, 2010; Newman, 2008; Sternberg, 1997) and academic performance, only students with excellent grades earn opportunities for further development. The enrichment program FK Youtuber, under the concerns of having underachievers, aims to provide an opportunity for students, to develop and show others their ability in information technology and the use of language.

Project-Based Learning

Project-based learning is defined as "an instructional technique in which meaningful tasks, often in the form of problems, serve as the context and stimulus for knowledge building and critical thinking" (Howard, 2002, p. 348). As gifted education serves as a broad spectrum of specialised services to maximise students' intellect and creativity,

underachievers, however, comparatively receive insufficient chance to develop competencies. Therefore, the mission of the FK Youtuber enrichment program is to recognise and nurture the development of exceptional abilities so that underachievers demonstrate skills in IT, the use of English, positive self-esteem, skills of problem-solving and creative productivity. It provides real-world challenges to the students and encourages them to be more motivated and engaged in an activity relevant to them. If an activity is more relevant to students' lives, they will devote more time and effort to the activity, which may lead the student to a deeper understanding of the learning task; on the other hand, students' motivation is viewed as students' values, needs, interests, and passions are crucial intrapersonal factors in the differentiated model. Fung Kai No.1 Primary School is committed to the FK Youtuber recognising students' differences, abilities, interests and needs. Our goal is to enrich the education through events and activities designed to expose them to various challenging and creative thinking experiences. This commitment is a responsibility to students to help them maximise their high potential and allow them to thrive and create. Providing students with enhanced, differentiated instruction in the program enables us to nurture the diverse talents and abilities of our students.

Self-determination theory

The FK Youtuber enrichment program also aligned with the Self-determination Theory (SDT) approach to meet the psychological needs of students. SDT suggests humans have basic needs for autonomy, competence, and relatedness (Ryan and Deci, 2002). As a result of joining the FK Youtuber enrichment program, students will have the opportunity to achieve district goals at a level commensurate with their talent. They will be challenged to apply their knowledge and skills in complex and advanced ways to create their own YouTube video (Autonomy). These goals provide students with

support and structure for finding challenges in operating their own channel while encouraging them to achieve their maximum potential (Competence). Collaborative decision making and problem solving can also be developed while working in groups. Students would be able to discuss, consult, collaborate with each other and create bonding (relatedness). Attaining these standards ensures that students will result in having a solid foundation of knowledge, skills and competencies essential to lead productive lives as they continue their education.

Program goals

1. FK Youtuber aims at raising students' motivation in learning.

YouTube, bloggings are the things that teens reach every day. Creating YouTube video on their own raise students' motivation in learning English, as well as in information technology. It will eventually develop students with a desire for excellence, a sense of individual worth, a connection and responsibility to self, school and to society. Students will be aware of their responsibility to their gifts and talents to improve themselves, school and the society. They are required to post clips related to school lives which may also increase their sense of belonging. The program will help students determine excellence, and to help students become aware of their own strengths.

2. English language development is another main goal in the enrichment program.

Since the program provide students with the experience of being compact and accelerated, they are required in advanced English language building. Language development on one hand focus on students' written English by adding subtitles and description for the clip they post online, on the other, spoken English should be trained as well. Training for spoken and written English not only foster students' development

on building a YouTube video. Students' communication skills as well as interaction with others, even interaction with Native speakers will be developed, too. Moreover, it is aimed that throughout the program, students are able to develop a self-learning, English language environment which helps them to explore the world. The program will also provide a framework for further study and activity with differentiated materials. Perpetually change will be made order to meet immediate and long-range needs of the students. A variety of instructional alternatives will be provided to present the curriculum.

3. To build up students' skills in information technology.

By attending courses on information technology in the program, students are encouraged to transform knowledge into actual practice. They are required to add subtitles and description in the clips, monitor camera and microphone in filming, edit and post it online, and to manage in replying comments and further management on the YouTube video. The program will provide opportunities for students to set personal goals, keep records, and monitor their own learning progress.

4. To provide rooms for students' creativity.

Since lectures and teaching trains students with skills of information technology and competencies in the use of English, the program encourages students to create their own video clips with the things they are interested in. They are free to think about the content, the way of editing, animations to be added in order to create their own clip. Since teachers are served as facilitators, the program should be student-centered. By providing opportunity and grounds for student to develop creativity, the talents Arts (TA), under Gagne's differentiated model of giftedness and talent might be formed.

5. To train up students' skills in problem-solving.

By facing difficulties in starting up a YouTube video, students are encouraged to find solutions on their own. Teachers will serve as a counselor by giving comments and suggestions however, students still need to solve the problems individually. Teachers will identify outside-of-school learning opportunities and community resources that match students' needs and strengths which help them in further development and problem solving. Moreover, teachers use evidence-based approaches to grouping and instruction that promote psychological and social-emotional skill development for students with gifts and talents.

Evaluation

Goal	Evaluation
1	Questionnaire and interview of students
2	Pre-post test in English language
3	Students' performance will be evaluated by every step of practice, while parents and teachers are fully aware of the content of enrichment program. Self-assessment, on the other hand, has crucial role in the enrichment program.
4	The result will show in student's final product (you-tube video)
5	Evaluate during debriefing of the lesson activities

Selective Criteria

15-20 students from grade 4 – grade 6 are invited to join this programme, students are enrolled based on the following criteria: -

1. Motivation letter: Students need to show their willingness in joining the program by completing a personal statement. They are required to tell teachers the reason of joining this program, their expected outcomes and their commitment to the program.
2. Teachers' observation: teachers are assessing students' performance in English and technology by daily basis. For students' abilities in English usage, some of them are advanced in writing and spoken English (in top 20% - 50%) yet they are performing weak in other subjects. These students might not join school-based acceleration program since overall academic performance is put into consideration.
3. School performance: Skills in information technology will be assessed in daily practices. Formative and summative assessment will provide students' general performance in school which students could be selected according to their grades in IT. This programme also selects the student who are top 50% of the school performance in English Language. This program aims to develop the talented student in English language, who maybe underachieving in their talents because they are not eligible to enter the regular acceleration program.

Program Content

This program contains 24 learning hours, including 12 teaching hours, (in 12 lessons, 1 hour each) and 12 study hours (1 hour for assignment after each lesson). The overview of lessons is shown in below: -

Lesson	Activities	Leaning Goal(s)
1 (60 mins)	Theme: Writing skills 1. Pre-test (15mins)	1. To enhance students'

	• Pre-test on English language 2. <u>Introduce the programme (5mins)</u> • Students are asked to set personal goals for the programme • Inform students: the programme is about video-making 3. <u>Conjunction (15mins)</u> • Teacher provides students with 2 different writing (one with conjunction) • Group discussion on the benefit of using conjunction • Practice: students will receive a worksheet that they need to combine the two sentences by using conjunction 4. <u>Grammatical errors (15mins)</u> • Teacher shows some sentences which have grammatical errors • Group discussion on the errors and teacher will provide explanation on it • Practice: students in group will receive a worksheet that they need to point out the grammatical errors 5. <u>Debriefing (10mins)</u> • Self-evaluation	ability in using English 2. To enhance students' writing skills through using conjunction words 3. To enhance students' communication skills between peers
2 (60 mins)	Theme: Content writing and create the storyboard 1. <u>Revision on writing skills (5mins)</u> • Students will be asked 3 questions about grammatical errors and writing skills learnt	1. To develop students' creativity through creating the storyboard

	2. <u>Introduction of the filming topic: school life (5mins)</u> 3. <u>Vocabulary related to school life (15mins)</u> • Students brainstorm the vocabulary/scenes related to school life and share in group • Vocabulary related to school life will be taught by teacher • Students write a short paragraph about their school life by using the vocabulary learnt. 4. <u>Plan for video and create the storyboard (25mins)</u> • Students are divided in groups and plan for storyboard • Students are required to write down their ideas related to the topic and share their ideas in the whole class • Feedbacks from classmates and teacher 5. <u>Debriefing (10mins)</u> • Self-evaluation	2. To enrich students' English vocabulary 3. To enhance students' ability in using English
3 (60 mins)	Theme: Site-visit 1. To have a site-visit to the YouTube head office in Hong Kong, where students can have better understanding on filming, editing, or creating videos	1. To enrich students' basic knowledge of video editing
4 (60 mins)	Theme: Filming techniques 1 & 2 (Camera lighting and long shot) 1. <u>Explanation on basic camera function (15mins)</u> • Teacher will briefly explain the following camera functions to students	1. To enrich students' basic knowledge of filming techniques

	• ISO: camera sensor's sensitivity to light; higher ISO, brighter image • Shutter speed: higher shutter speed, sharper the photos • Aperture: larger the number, smaller the opening of the aperture, the depth of image is less shallow, more images will be in focus • White balance • Frame rate 2. <u>Introduction of filming techniques 1: Camera lighting (20mins)</u> • Teacher will show students two videos which different lighting is used in the video • Group discussion on the differences of lighting and their feelings based on the usage of different lighting • Explain the important of lighting used in filming • Introduce the elements of three-point lighting: the key light, fill light and back light and demonstrate how it functions • Practice: students in group will take photos/short video clips by using the skills (topic: school) 3. <u>Introduction of filming techniques 2: Long shot (20mins)</u> • Briefly introduce the technique: long shot which the camera is a bit far away from the character or other subject	

	• Long shot used in videos will be showed • Teacher demonstration • Student practice: students in group will take photos/short video clips by using the skills (topic: school) 4. <u>Debriefing (5mins)</u> • Summarize what they have learnt in class • Evaluate the difficulties students faced during lesson 5. <u>Homework</u> • Watch the tutorial video and practice the skill (Long shot)	
5 (60 mins)	Theme: Filming techniques 3 & 4 (Shots: medium shot and close-up shot) 1. <u>Introduction of filming techniques 3: medium shot (25mins)</u> • Briefly introduce the technique: medium shot is to demonstrate information to the audience as more details will be shown; often used in dialog scenes • Video clips included medium shot will be shown • Teacher demonstration and trials of medium shot: students in group will take short video clips by using medium shot 2. <u>Introduction of filming techniques 4: close-up shot (25mins)</u> • Show the video clips that involve close-up shot	1. To enrich students' basic knowledge of filming techniques

	• Question before introducing technique 4: what's the differences between medium shot and close-up shot? • Introduction of close-up shot: it highlights the emotional clues from the characters and should show the details that need audiences to pay attention to. • Teacher demonstration and trials of close-up shot: students in group will take short video clips by close-up shot 3. <u>Debriefing (10mins)</u> • Students' self-evaluation and teacher's feedback 4. <u>Homework</u> • Watch the tutorial video and practice the skill (medium shot and close-up shot)	
6 (60 mins)	Theme: Shot composition and camera movement 1. <u>Revision (10mins)</u> • Teacher will show 4 different clips, students need to identify the techniques used in the video clips 2. <u>The basic rule of shot composition: rule of thirds (20mins)</u> • Briefly introduce "rule of thirds": divide the frame into a grid of nine squares; function: to develop a more balanced shot • Teacher demonstration: take some photos by using "rule of thirds" and explain • Practice: students in group will take photos by using the "rule of thirds" 3. <u>Camera movement (20mins)</u>	To enrich students' basic knowledge of filming techniques

	• Introduction of different camera movement (zoom, push-in, pan, tilt) and the relevant functions • Videos with different camera movement will be shown • Discussion and match the camera movement and video clips • Teacher demonstration and student practice: students in group will take video clips by using different camera movement (zoom, push-in, pan, tilt) 4. <u>Debriefing (10mins)</u> • Students' self-evaluation and teacher's feedback based on their performance 5. <u>Homework</u> • Prepare questions that would like to know from the guest	
7 (60 mins)	Theme: Guest sharing 1. <u>Local Youtuber sharing (35mins)</u> • Sharing on the topic of "How to develop personal style in making video?" • Filming and editing tips for video-making beginners 2. <u>Q&A Session (15mins)</u> • Students are encouraged to ask relevant questions based on guests' sharing, ask for the opinion on filming and editing 3. <u>Debriefing (10mins)</u> • Students evaluate on what they have learnt from the guest speaker and how could they apply the skills in the coming editing process	1. To enrich students' knowledge of filming through the sharing from the guest speaker

8 (60 mins)	Theme: Filming 1. <u>Discussion (15mins)</u> • Students are divided in group • Discussion on the techniques that should be used in their storyboard 2. <u>Filming (40mins)</u> • Each student in group is responsible for using one of the techniques to film by referring to their storyboard • Teacher will be the supporter to help students to tackle problems 3. <u>Debriefing (5mins)</u> • Discussion on the difficulties they faced during filming and try to find out the solution	1. To apply the filming skills learnt
9 (60 mins)	Theme: Editing skills 1 & 2 (Basic timeline) 1. <u>Introduction of background information of video editing (20mins)</u> • Introduction of video editing programmes (e.g. Adobe Premiere Pro., Apple iMovie, Shortcut) • Show the editing process • Introduction of some important terms in video editing in order to be more familiar with video editing 2. <u>Introduction of editing skill 1: Basic timeline (30mins)</u> • Introduce the use of timeline in editing • Introduce the basic timeline tools (e.g. selection tool, ripple edit tool)	1. To enrich student's basic knowledge of video editing 2. To enhance students video editing skills through hands-on experiences in video editing 3. To promote self-learning by providing related learning materials

	• Students import video clips and try to use the tools to edit 3. Debriefing and conclusion (10mins) • Discuss on the difficulties faced during editing and find out the best solution • Evaluation on how much can the students master the skill learnt 4. Homework • Watch the tutorial video and practice the skill (Basic timeline)	
10 (60 mins)	Theme: Editing skills 2, 3 & 4 (Cuts, Montage and Inter cutting) 1. <u>Revision (5mins)</u> • Revise skill learnt in the previous lesson (Basic timeline) • Teacher will ask questions about the basic timeline tools 2. <u>Introduction of editing skill 2: Cuts (15mins)</u> • Introduce the basic idea of cuts • Teacher demonstrates and students follow the steps to practice the skill 3. <u>Introduction of editing skill 3: Inter cutting (15mins)</u> • Introduce the basic idea of inter cutting: to take two scenes and show that they are happening at the same place or time • Teacher will show some video clip that involve Inter cutting	1. To enrich students' basic knowledge of video editing 2. To enhance students video editing skills through hands-on experiences in video editing

	• Teacher demonstrates and students follow the steps to practice the skill 4. <u>Introduction of editing skill 4: Montage (20mins)</u> • Introduce the basic idea of montage: cut a series of scenes in one scene (combination) • Teacher will show some video clip that involve montage • Teacher demonstrates and students follow the steps to practice the skill 5. <u>Debriefing (5mins)</u> • Discuss on the difficulties faced during editing and find out the best solution • Evaluation on how much can the students master the skill learnt	
11 (60 mins)	Theme: Editing skills 5 & 6 (Adding audios, background music and subtitles) and Finalize the video 1. <u>Explain the importance of adding other element in the videos (10mins)</u> 2. <u>Introduction of editing skills 5: adding audios and background music (15mins)</u> • Teacher introduces the tools for adding audios and background music • Teacher demonstrates how to add audios and background music in the video • Students practice the skill by adding relevant background music/audios 3. Introduction of editing skills 6: adding subtitles (15mins)	1. To enrich students' basic knowledge of video editing 2. To enhance students video editing skills through hands-on experiences in video editing 3. To promote self-learning by providing related learning materials

	• Teacher demonstrates the process of adding subtitles to the video • Students practice the skill by adding subtitles to their video 4. <u>Finalize the video (20mins)</u> • Students apply all the skills learnt in editing and finalize the video 5. <u>Homework</u> • Finish the video editing process and prepare for the presentation of the video	
12 (60 mins)	Theme: Presentation of the video 1. <u>Presentation of the video clips (40mins)</u> • Students show and present their final production • Other students discuss and provide feedback for their classmates 2. <u>Overall feedback for students (5mins)</u> • Teacher evaluates students' on performance and give feedback according to their production and performance 3. <u>Post-test (15mins)</u> Homework: Self-evaluation on the programme	1. To enhance students' confidence in using English in speaking 2. To develop critical thinking skills through evaluating classmates' performance 3. To assess students' presentation and IT skills after the programme

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School based enrichment program for HKSASPS P.2

"Improving the viewing rate of videos of the school YouTube channel" – An English & Leadership programme for Primary 2 students

Maggie Li, Lui Ho Wai Ken, Kam Wan Man Ava

Background, Theory and Framework

Enhancing equal learning opportunities for underprivileged students

HKSASP is a government-subsidized Primary School with a Christian background. The student population range from 5.8 to 14 years old. Most of the students come from families with lower socio-economic backgrounds or low-income families. These underprivileged students, therefore, do not have enough family recourses to furnish their talents. It is suggested that parents tend to have long working hours in low SES families (Raissian & Bullinger, 2017). Parental support is also not enough in low SES families. Providing resources and supports to underprivileged students from schools are especially important to underprivileged students.

The school mission is built upon the belief that ALL children, regardless of their background, have the right to receive quality learning experiences that maximize their full potential through practices guided by the conception of "Learn to learn, learn to live and learn to create". The school attitude towards the gifted students is paralleled with the school mission; to provide opportunities and learning experiences for them to be equipped to face challenges and reach their full potentials in the future. The school has been promoting cooperative learning, self-direct learning, and project-based learning to achieve the above.

Underrepresented talents in language due to the medium of instruction

English language Learners' talent (ELLs) was found to be underrepresented in the U.S. (Peter & Engerrand, 2016). When talented students are instructed in an unfamiliar language, the language becomes a barrier for talented students to unleash their potential. Especially for language talented students, for example, students talented in the English language who use Chinese to learn other subjects may not show their talents in English as they simply do not have the environment to furnish and vice versa.

Underrepresented talents in language for highly Creative individuals in the school setting

With an unfamiliar language environment, students who are highly creative and talented in language may then be underrepresented because their creativity cannot be shown. It was found that there is a significant correlation between one's creativity and one's foreign language achievement (Pishghadam et al., 2011). One's who is highly creative may also be talented in language. Therefore, it is believed that creativity can be one of the criteria to identify underrepresented language talented students.

Cultivating the talent via the Environmental (E) Factor

The program's construction refers to Gagne's Differentiated Model of Giftedness and Talent (DMGT 2.0; 2008 updated). Gagne's model suggested that talent is the outstanding mastery of systematically developed abilities which the individual is at top 10% of age peers in the particular field. It is also believed that talents and abilities can be developed. The program targeted to develop students' talent by cultivating Social Service (TP) and Administration/ Sales (TM) competencies. As part of the Environmental (E) factor, the school hopes to offer students the provisions (EP)

through a structured enrichment program, activities and challenges leading to a specific goal.

Project-based learning & Connecting real-life experiences in language learning

Project-based learning will be adopted in these programs. It is a teaching method for students to learn by applying knowledge and skills through an engaging experience. Students will be divided into groups and videos to introduce the Chinese New Year in English in this program. By creating videos, students can develop various skills. For example, preparing the content and script of the video can develop the students' writing skills while presenting the script in the videos also develop the students' speaking skills. Project-based learning also allows students to connect the textbook knowledge to real life. It has been proved to have advantages in learning languages (Sukiawati & Nurfaidah, 2021). While connecting real-life experience into language learning, students are able to better associate the words and extract the words from the mental lexicon.

Self-directed learning

Besides project-based learning, self-directed learning is also adopted. It is an approach in which the teacher encourages students to structure activities in their way and is actively involved in the activities. In this project, students take the lead in making videos and work together by themselves. They will explain and design their action plan with groupmates, learn and achieve by themselves towards the learning outcomes. It is believed that self-directed learning effectively develops students' learning abilities by active participation in the project activity.

Learning through playing: Using Competition to motivate the students

The videos created by the students are going to be presented to the class in the form of competition. The videos will be voted to select the winner. Students who created the best video will be awarded. Burguillo (2010) suggested that using of friendly competitions is able to provide a strong motivation to the students and enhance the student's learning experience. In the form of group competition, students are not only competing with each other but also collaborate with groupmate to promote positive attitude toward the competition.

Program goals

1. To enrich the English vocabularies relate to Chinese New Year

2. To enrich the sentence structures in introducing and explaining a subject

3. To improve the English presentation skills of the students

4. To enhance the confident in speaking English

5. To enhance the communication skills during the group work of the students

Selective Criteria

Twelve Primary 2 students who do not perform well in English or Chinese in school performance and consider to have talent in social and creative domains are enrolled in this programme. The students are selected to enroll in the program through nomination from their previous class teachers under their observation in Social and Creative domains. The class teachers are to nominate the top 10% of students of the two domains and give evidence verbally to the program tutors. Social and Creative

domains are chosen here because the program is designed to develop those abilities through activities specifically, we assume that with the learning environment that with activities based, creative students with talent in language will be able to flourish. (It is believed that project-based learning with various classroom activities in the learning environment can better help the language talented and creative student flourish.)

Program content

The program will consist of 21 sessions across the whole academic year. Due to the pandemic, each session is divided into two lessons: a 30 mins face to face lesson in the morning and a 30 mins online lesson on the same day afternoon. The program will be divided into two blocks, this lesson plans is the second block of the programme, which include 10 sessions, total 10 study hours, in 20 lessons, 30 minutes each.

In the first block, students were introduced the program goals. The students have learnt the importance of the goals and how they related to leadership. The students have learnt the leadership skill through the team-building activities and activities that demonstrate the importance such as listening in teamwork. The activities are likely to be conducted in the morning and recorded. The tutor will replay the morning activities and make debriefing at the end of each session.

In the second block of the program, students will be divided into 3 teams, each observes by one tutor. The teams are providing with a problem, “Improving the viewing rate of videos of the school YouTube channel”. The students will then take turns in leading a team to produce the most viewed video among the three teams. The observing tutor will provide support and a debriefing after each session. There will be a presentation, celebration and general debriefing at the end of the program.

This program contains 10 sessions, total 10 study hours, in 20 lessons, 30 minutes each. The overview of lessons is shown in below:

Lesson	Activities	Leaning Goal(s)
1-2 (60 mins)	Theme: What is a good video? 1. <u>Pre-test (10 mins)</u> • Each student will be asked 3 questions related to Chinese New Year, their answer will be video recorded and teacher will evaluate their English performances with rubric 2. <u>What is a good video? (15 mins)</u> • Play two videos, which show a similar content, to students • Discussion: which video is better? Why • Students form in group, discuss and explain their thought with elements of a good video • Summarization and introduce the elements of script and storyboard in a video 3. <u>Introduction of the task (5 mins)</u> • Explain the task they need to do • Revision of the elements • Divide them in group and discuss which element they think would be most important 4. <u>Debriefing with students' performance (30 mins)</u> • Self-evaluation + video showed them by tutor for evaluation	1. To develop critical thinking skills through evaluating the elements that a good video should include.

3-4 60 mins)	Theme: Chinese New Year 1. <u>Introduction of Chinese New Year's history (10mins)</u> • Mini game: students will be asked 5 questions about the history of Chinese New Year (in multiple choice format) to show their prior knowledge of it • Teacher shows the video to introduce the history of Chinese New Year. (https://www.youtube.com/watch?v=MzqRFUjRA) • Check students' understanding by asking relevant questions based on the content of the video • Teacher summarizes the content of the video 2. <u>Discussion on Chinese New Year's traditions (15mins)</u> • Students will be divided into groups and discuss the traditions of Chinese New Year. (Hints: food, costumes, superstition) • Students present their discussion results • Teachers group their ideas into different categories and teach the related English vocabulary 3. <u>Summarization and Revision (5mins)</u> • Students match the photos with relevant English vocabulary 4. <u>Debriefing with students based on their performance (30mins)</u> • Self-evaluation • Feedback for students	1. To enrich students' English vocabularies relate to Chinese New Year. 2. To enhance students' confident in speaking English. 3. To enhance students' communication skills during group work. 4. To improve the English presentation skills of the students.

5-6 (60 mins)	Theme: Designing the YouTube video 1. <u>Review and introduction of the task(5mins)</u> • Elements of a good video • Explain the task they need to do: to design the YouTube video based on the theme of Chinese New Year • Remind them the problem "improving the viewing rate of videos of the school YouTube channel", and the goal to produce the most viewed video among the three teams. 2. <u>Write the script and create a storyboard (25mins)</u> • Sentence structures in introducing and explaining a subject will be taught, following by some simple exercise. • Group discussion on the topic, an attention-grabbing introduction and content of the video (e.g. food, costumes) • Students in group take turn to be the leader and lead the discussion • Draw a brief storyboard 3. <u>Debriefing with students based on their performance (30mins)</u> • Self-evaluation • Feedback for students • Remind students to have some research related to their topic and amend their script	1. To develop students' creativity through creating the content of a video 2. To enrich the sentence structures in introducing and explaining a subject. 3. To enhance students' leadership and communication skills during group work.

7-8 (60 mins)	Theme: Recording the video & production 1. <u>Recording the video (20mins)</u> • Students are responsible for different tasks (e.g. acting, video taking, act as a narrator) • Read out their script and record the video 2. <u>Editing the video (10mins)</u> • Students play back their video and check whether there are any rooms for improvement 3. <u>Debriefing with students based on their performance (30mins)</u> • Reflection on the process of video taking • Self-evaluation	1. To enhance students' communication skills during group work. 2. To enhance students' confident in speaking English.
9-10 60 mins)	Theme: Presentation and Competition 1. <u>Introduction of the task (5mins)</u> • Introduce the lesson plan and the criteria of video voting 2. <u>Video showcased in the class and presentation(15mins)</u> • Each group present their idea, briefly introduce the content of the video • Each group shows their video during lesson. • Q&A session and students need to convince other group to vote for their video 3. <u>Vote and discussion (10mins)</u> • Students vote for their favourite video • Mini prize giving ceremony • Discussion on the reasons why they choose/vote for that video 4. <u>Debriefing with students based on their performance and production (30mins)</u> • Positive reinforcement • Self-evaluation • Feedback for students	1. To enhance students' confident in speaking English. 2. To improve the English presentation skills of the students. 3. To appreciate everyone's effort in making the video.

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School-based enrichment program for PLK Chong Kee Ting Primary School -Enhancing Mathematic Ability through Racing Car Activities

Gwen Mui, Lui Ho Wai, Kam Wan Man Ava

Background, Theory and Framework

Problem-based learning

This program adopts the problem-based learning approach (PBL) to develop mathematical calculation skills about speed. According to Gallagher (1997), PBL consists of: (1) an ill-structured problem, (2) substantive content, (3) student apprenticeship, and (4) self-directed learning. In PBL, students are encouraged to find problems actively, suggest hypotheses and create solutions. PBL provides the opportunity for students to develop flexible understanding and lifelong learning skills in particular topics (Hmelo-Silver, 2004). It also allows the students to develop their problem-solving skills by solving the problems in the real world rather than only receiving knowledge from the teachers inactively (Gallagher, 1997). Studies have suggested that PBL is effective for students of different ages, subjects, schools, and countries (Jo & Ku, 2011).

Student-centred learning approach & Self-determination theory

This program is also designed to use the student-centred learning approach. The students will take the lead in the learning process, prepare the lesson before the class, and actively solve the problems. Unlike the teacher-centred learning approach, the teacher will act as a facilitator to help the students brainstorm ideas and methods for

solving the problem of calculating and guiding them in the right way of calculating skills. According to the Self-determination theory, one can be motivated intrinsically and extrinsically (Deci & Ryan, 2012). It is believed that students in the student-centred learning approach tend to be more extrinsically motivated and develop soft skills like critical thinking and problem solving (Zakaria & Iksan, 2007; Johnson et al., 2009; Froyd & Simpson, 2010).

Through the engagement of the activities and topic to enhance the motivation of the student

Therefore, this program would like to cultivate the mathematical talents of students by the racing car activity with observing the characteristics of different cars and calculating the speed of the cars. Then, students have to design and make their cars to improve the speed of the cars after the discussion on their investigation with other students and seek help from the teacher. It is expected to improve the students' calculation ability, the spirit of inquiry, and learning motivation effectively through the activities. Rhodes (1997) distinguished between D-creativity, which arises from deficiencies in acceptance, love, and respect, and B-creativity, which results from intrinsic motivation. D-creativity may be the initial stimulus for creative activity. Still, it can transform into B-creativity, particularly as emotional needs are met, healing occurs, and "control of the environment and the symbol systems used for the expression" (p. 253) within the talent area are acquired. Therivel (1999) concluded that "great challenges" within the talented individual's environment can be counterbalanced with "great assistances" (p. 99). Kerr and McKay (2014) used the terms passion and falling in love with an idea to characterise eminent producers' personal, emotional investment for their work.

Program goals

In Subject (Maths):

1. To let the students know the principle of making the fastest racing car
2. To figure out and work out the principle of making the speedy racing car through making the speedy racing car
3. To identify the factors that will affect the speed
4. To apply the calculation of speed rate through case study
5. To consolidate the concept of the racing car reinforcement, consolidate the skill of calculating the speed rate, and promote self-regulated learning by providing well-designed materials and encouraging individual questions.

In personal development:

1. To develop students' problem-solving skills through refining the racing car
2. To enhance students' communication skills through discussion
3. To develop students' collaborating skills through sharing of different measuring method

Evaluation

1. A Mathematic test will be given before and after the enrichment programme to evaluate the performance of the specific topic in speed rate.
2. Questionnaires will be distributed to students before and after the program to evaluate the program goal.

Selective Criteria

The program targets at P.5 – P.6 students who overall rank top 30% of their grade but rank only top 50% in mathematics. It is believed that there is discrepancy between the student's expected performance and the actual performance in mathematics because the student is capable to achieve in other subjects. The selection will also consider the student's motivation in learning mathematics. For example, students who are motivated in learning mathematics but fail to participate the mathematics gifted programme because of insufficient scores in mathematics exam will be invited.

Program Content

This program contains 10 learning hours, including 6 teaching hours (in 6 lessons, 1 hour each) and 4 study hours (4 hours for assignment after each lesson as planned below). The overview of lessons is shown below:

Lesson	Activities	Learning Goal(s)
1 (60 mins)	Topic: Calculating the speed rate (basic) 1. Starting off the course (10 mins) • introducing the learning goals in the course • set up a learning goal (together with the students) • pre-test 2. Brief introduction of the basic concept (10 mins) • Invite students to provide some cases that may include the calculation of speed rate • school-based learning materials are used to bridge the concept of speed rate 3. Group discussion (20 mins) • a mathematics-related racing car tournament are used to increase their learning motivation	1. To let the students know the principle of making the fastest racing car 2. To understand the basic concept of speed rate

	• Activity: 3 students in one group; each group will be given a math question to solve. One student from the group needs to act according to the given material; the other two students need to figure out and solve the math question. 4. <u>Game time: self-study (10 mins)</u> • Delivery of the components of making a racing car and organising the group discussion to make the fastest racing car. Allocating the responsibility of each student, such as designer, observer and the person who calculate the speed rate. 5. <u>Debriefing (10 mins)</u> • Self-evaluation on their performance during lesson	
2,3 (120 mins)	Topic: Figure out the factors affecting the speed of the racing car 1. <u>Review the first lesson (10 mins)</u> • Students will be asked 2 questions about speed rate (calculation) 2. <u>Group discussion (60 mins)</u> • Discussion of the factors that affect the speed of the racing car, i.e., wind direction, friction etc. • Students share their opinion and teacher will explain more based on students' sharing • Group study time: students will form in group of 3 students. Each group need develop a strategy to solve the problems. Teacher will provide hints to guide students to develop the strategy • Students present their discussion based on the strategy 3. <u>Organising the car racing activity (20 mins)</u> • Students are divided into groups, and they will discuss their ideas of making the fastest racing car. • Students share their ideas	1. To identify the factors that will affect the speed 2. To figure out and work out the principle of making the speedy racing car through making the speedy racing car 3. To enhance students' communication skills through discussion 4. To develop students' problem-solving skills through refining the racing car

	4. <u>Improving the racing car (20mins)</u> • The grouping will try to improve the racing car by trial out and testing if the ideas work or not. Through this activity, students can discover some findings to improve their speed of the racing car. • Students present their findings 5. <u>Debriefing (10 mins)</u> • Students evaluate on what they have found and what they learnt	
4,5 (120 mins)	Topic: calculating the speed rate (advanced) 1. Review the second lesson (10 mins) • Students will be asked for the factors that will affect the speed of the racing car 2. <u>Brief introduction of the basic concept (40 mins)</u> • The strategies and skills of calculating the speed rate • Students will be divided into 3 students per group. Each group has a set of unique data and they need to ask each other questions in order to finish the calculation and find out the factors that would affect the speed rate • Analysis of the factors and questions for calculating the speed rate 3. <u>Group study time (40 mins)</u> • Start calculating the speed rate • Students will be divided into groups to record the result of the car racing tournament. • Students will share the measuring method and compare the car's actual speed as different groups may have different ways to measure the speed of the cars. • Teacher's role is to be a facilitator to help them brainstorm ideas and strategies for measurement and guide them in the right way of calculating skills. 4. <u>Discussion on the effectiveness and enlightment from other groups (20mins)</u>	1. To apply the calculation of speed rate through case study 2. To develop students' collaborating skills through sharing of different measuring method

	• Students will discuss on the effectiveness of different measuring method • Students will evaluate whether the measuring method could apply to theirs or not 5. <u>Debriefing (10mins)</u> • Students will evaluate on their performance (e.g. active or not)	
6 (60 mins)	Topic: Debriefing & Sharing 1. <u>Review the course (5 mins)</u> • Students will be asked to summarize the strategies and skills of calculating the speed rate 2. <u>Group sharing (10 mins)</u> • Students will share their findings on the factors affecting the car speed and provide suggestions to increase the speed during the sharing. • Students will refine their design after the sharing session 3. <u>Tournament (15 mins)</u> • Students will make a comparable tournament to demonstrate whether their suggestion can improve the car speed. By carrying out the tournament, students can apply their calculating skills to measure the car's speed and prove their suggestions. • Evaluate the results 4. <u>individual reflection time (15 mins)</u> • Students will read the learning goals they set in the first lesson and write a reflection on how much or to what extent they have achieved their goal 5. <u>Post-test &evaluation (15 mins)</u>	1. To consolidate the concept of the calculation of speed rate and the factor that may influence the speed rate through racing car tournament

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School-based enrichment program for S.K.H. Tin Shui Wai Ling Oi Primary School For underrepresented talent students in English Drama because of language variables

Lo Yuk Ki, Maggie

Lui Ho Wai, Ken, Li Miao Hong Heidi, Kam Wan Man Ava

Background, Theory and Framework

Learning English as a second language: the learning blocks for Chinese speaking students

The effect of the systemic differences on the cognitive processes of reading between Chinese and English has been studied for decades (Perfetti et al., 2002). As a logographic writing system, the Chinese language processes differently in reading, writing, and speaking than the English Language, considered an alphabetic writing system. Jiang (2009) suggested that when the pattern of the first language (L1) is very different from the second language (L2), it results in negative transfer. This phenomenon happens among Chinese speaking students to learn English as a second language in Hong Kong. The systematic difference between the Chinese and English languages made it challenging for the Chinese-speaking students in Hong Kong to memorise the vocabulary and understand the grammar. The limited vocabulary and grammar proficiency primarily affect the subject performance of the students in the English language.

Underrepresented talent in English due to the limited vocabulary and grammar proficiency

The practice of English language education in Hong Kong tends to focus on dictations, grammar exercises that concentrate on language structures and rote memorisation in both primary and secondary schools (Poon, 2010).To match the classroom practice, the school exams mainly evaluate students 'grammar proficiency and vocabulary; the proportion to assess students 'speaking skills is relatively low. If students are only good at speaking, schools tend to oversee them because school exams are more focused on correct grammar, and these students cannot score high overall in the English language. Students who are talented in English speaking but limited vocabulary and grammar proficiency are believed to be underrepresented with the vocabulary and grammar proficiency-oriented examination at school.

Using drama in language education

To foster the students 'acquisition of English language skills, drama activities will be introduced. Using drama in language education has been proven to improve students ' language skills (Ballman, 2006). First, using drama allows teachers to encourage the students to practice speaking outside the classroom through rehearsal. Second, teachers can immediately provide feedback to the students when the students have language problems during the drama. Third, students are motivated in learning a new language when using drama (Maley & Duff, 2005). Besides speaking skills, reading skills and vocabulary knowledge are of the students can also be improved through drama (Khasyar & Ratnasari, 2021). Students can also learn new vocabulary that they cannot learn in the classroom.

The learning style of gifted students: through understanding strategies

The network-thinking style of gifted students tends to allow them to mobilise and connect knowledge with knowing the theory behind it when learning new things. The traditional teaching approach that emphasis dictations, grammar and rote

memorisation do not fit the gifted students 'thinking style and demotivate their interest in learning English. Gladwell (2008) found that talented people are strongly motivated to carry out sensible work while it is interesting for the individual and provides autonomy. With drama activities, teachers can apply various teaching strategies to the student, establish interactive activities that is sensible to the students and avoid the rote memorisation.

Program goals

1. To reduce students' English reading barriers through learning different reading skills.
2. To enhance students' understanding of different script reading skills and drama skills by applying drama performance skills.
3. To reduce students' fear in using English and build up their confidence in speaking English.
4. To improve students' script reading skills and drama skills through drama performance.
5. To develop students' critical thinking skills through evaluating classmates' performance.
6. To promote self-learning by providing relevant learning materials.

Evaluation

1. A reading-aloud passage will be given before and after the enrichment programme to evaluate students' speaking skills.

2. Questionnaires will be distributed to students before and after the program to evaluate the program goals.

Selective Criteria

The program targets talented P.5 students who mainly use Chinese as their L1 and English as L2 from primary school. Students will be selected based on the school exams in speaking paper and vocabulary & grammar paper. Students who score at the top 30% in speaking exam, but score below 50 out of 100 marks in vocabulary and grammar paper in my school will be selected. Although these students at the top 30% at the current school in the speaking exam, it is believed that these students are underrepresented as talented in speaking due to the limited vocabulary and grammar proficiency.

Program Content

This program contains 12 learning hours, including 6 teaching hours, (in 6 lessons, 1 hour each) and 6 study hours (1 hour for assignment after each lesson). The overview of lessons is shown in below:

Lesson	Activities	Leaning Goal(s)
1 (60 mins)	Topic: Reading-aloud skills 1 & 2 (decoding and vocabulary) 1. Pre-test (15 mins) • ask students to read aloud one of the scenes of the story 2. Pre reading aloud session (5 mins) • ask students to be a good listener and get ready for them to know more about the story • take a picture walk with students	1. To understand the content of the story. 2. To reduce students' English reading barriers through learning reading skill of decoding words and

	3. <u>Understanding the content of the story (5mins)</u> • ask questions about the story and invite students to answer or predict the development of the story 4. <u>Introduction of reading skill 1: Decoding words (10mins)</u> • Phonics revision with students • Introduce the skill of decoding words during reading • Use the skill to sound out words students have not heard before • Students try to decode words in the story and read out some words in the story which they have not learnt before 5. <u>Introduction of reading skill 2: Vocabulary (10mins)</u> • Introduce the skill of vocabulary, guessing the meanings of words in the story through pictures or context • Try to guess the meaning of words in the story by applying the skill leant during reading aloud 6. <u>Practice after reading aloud session (10 mins)</u> • Students will be divided in group and each group will receive a passage (a short story) • Students are required to use the skills learnt in class to discuss the pronunciation of highlighted vocabulary in the story and guess the meaning of it • Teacher will show the highlighted vocabulary and invite groups to share their ideas, teacher corrects their answer • Teacher will give feedback to students based on their performance	vocabulary guessing 3. To build up students' confidence in speaking English 4. To promote self-learning by providing related learning materials

	• Revise the pronunciation and meaning of the highlighted vocabulary • Invite the whole class to do reading aloud after 7. <u>Conclusions (5 mins)</u> • Conclude the lesson: reading aloud skills • Encourage students to practice more <u>Homework:</u> Watch a video clip about reading aloud skills	
2 (60 mins)	Topic: Reading-aloud skills 3,4 and 5 (fluency, facial expression and eye-contact) 1. <u>Revision (10 mins)</u> • revise the first two skills: decoding and vocabulary 2. <u>Introduction of reading aloud skill 3: Fluency (10mins)</u> • Stress the importance of fluency in reading aloud • Fluency: instantly recognise words • Mini game: tongue twisters. The whole class firstly practice 2 tongue twisters with teacher • Students practice the tongue twisters individually • Invite students to perform 3. <u>Introduction of reading aloud skill 4: Facial expressions (10mins)</u> • Facial expressions: do appropriate gestures to gain audience's attention • Remind students to make the facial expressions larger than usual in order to let the audience find out what they are doing or guess the feelings of the characters	1. To enhance students' reading aloud performance by applying the skills of fluency, facial expressions and eye-contact 2. To build up student's confidence in speaking English 3. To promote self-learning by providing related learning materials

	• Mini game: role-play (perform related facial expressions according to the scenes) 4. <u>Introduction of reading aloud skill 5: Eye-contact (10mins)</u> • Eye-contact: make connection with audience and other performers • Teacher demonstration and explanation on the importance of eye-contact 5. <u>Practice (15 minutes)</u> • practice in small groups using 5 skills • invites groups to do reading aloud in the class by using 5 skills learnt 6. <u>Conclusions (5 minutes)</u> • conclude the lesson: 5 reading aloud skills <u>Homework:</u> Watch a video clip about reading aloud skills	
3 (60 mins)	Topic: Drama skills 1&2 (voice and movement) 1. <u>Revision (10 mins)</u> • revise all the skills of reading aloud students learnt 2. <u>Introduction of drama skill 1: Voice (15mins)</u> • Teacher introduce the drama skill of voice is to use appropriate volume to act • Practice: use different volume of voice to talk with each other • Teacher provides different situation and students need to pick the appropriate voice to act in group • Invite students to perform 3. <u>Introduction of drama skill 2: Movement (15mins)</u> • Introduction of movement: have an awareness of space	1. To understand different drama skills applied in the performance will lead to difference outcomes 2. To enhance students' drama performance in term of voice and movement 3. To promote self-learning by providing related learning materials

	• Mini game: play 'Red light, Green light' game in a specified area to arouse students' awareness of space 4. <u>Practice (15 minutes)</u> • Teacher will provide a short script for each group and students need to practice in small groups by using the 2 drama skills learnt • Group performance and feedback from teachers and other classmates 5. <u>Conclusions (5 minutes)</u> • conclude the lesson: 2 drama skills learnt (voice and movement) <u>Homework:</u> Watch a drama show and evaluate performers' drama skills (voice and movement)	
4 (60 mins)	Topic: Drama skills 3&4 (body language, Gesture) 1. <u>Revision (10 minutes)</u> • revise the 2 skills of drama skills 2. <u>Introduction of drama skill 3: Body language (15 minutes)</u> • Body language: the use of gesture to communicate the emotions or feelings • Practice: teacher will show a word, then students need to express the meaning by body language 3. <u>Introduction of drama skill 4: Gesture</u> • Gesture: different types of gesture used will send different messages to audience about the characters' personality or moods • Mini game (charades): teacher express a mood through gesture and students need to guess it. After students are familiar with the game, students can be the guesser or performer. 4. <u>Guessing game: guess what personalities or moods the classmates have through their gestures and discuss (20 minutes)</u>	1. To understand different drama skills applied in the performance will lead to difference outcomes 2. To develop students' drama skills through learning the usage of body language and gesture 3. To promote self-learning by providing related learning materials

	• Teacher will provide 8 topics and invite students to act, other classmates try to guess the personalities or moods through their performance 5. <u>Practice (10 minutes)</u> • Practice in small groups: each student write down the personalities and moods they would like to act • Perform in their group by using skills learnt • Students in group choose the best performer and explain the reasons 6. <u>Conclusion (5 minutes)</u> • Drama skills 3&4 (body language, Gesture) <u>Homework:</u> Watch a drama show and evaluate performers' drama skills (body language)	
5 (60 mins)	Topic: Practice and preparation 1. <u>Revision (10mins)</u> • Revise the 5 reading aloud skills and 4 drama skills through reading and acting 2. <u>Practice 1: use the reading aloud skills learnt to perform a drama (10 minutes)</u> • Read aloud the script and guess the meaning of the unfamiliar words • Use different symbol to represent or remind them to stop reading (fluency), to stress the facial expression or to make appropriate eye-contact with the audience • Practice in group 3. <u>Practice 2: use the drama skills learnt to perform a drama (10mins)</u> • Highlight the mood/personality in the script • Discuss and mark down the voice, gesture or body language should be used in the content	1. To apply the reading aloud and drama skills 2. To build up student's confidence in speaking English 3. To evaluate and make the appropriate props

	• Jigsaw learning: each student in group is responsible for one part of the script, they should perform that part by using the appropriate voice, movement, gesture and body language 4. <u>Preparation of props (30 minutes)</u> • Students will be divided into groups and discuss the props needed based on the script • Gather ideas from students and each group is responsible for making different props • Teacher will provide some of the materials and prepare the props	
6 (60 mins)	Topic: Drama performance 1. <u>Briefly introduce the task and evaluation rubric(5mins)</u> • Introduction of the drama performance and the voting 2. <u>Drama performance (40mins)</u> • Students have the drama performance by use all the skills learnt • Students have self-evaluation of their performance based on the rubrics (9 skills learnt previously) • Feedback from teacher and appreciate their effort put in the programme 3. <u>Post-test (15 minutes)</u> • ask students to read aloud one of the scenes of the story	1. To apply the reading aloud and drama skills 2. To build up student's confidence in speaking English 3. To develop critical thinking skills through evaluating classmates' performance 4. To respect and appreciate each other's performance

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「促進平等學習機會-為才華未展的學生製定有效的校本增潤課程計劃」(大埔舊墟公立學校) - 運用學生 STEM 潛能，帶動學習英文的動機

馬綽廷

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課程背景與理論框架

STEM 與英語能力

「推展 STEM 教育和資訊科技教育」和「跨課程語文學習」是教育局在「學校課程持續更新」的主要更新重點。STEM，分別代表科學（Science）、科技（Technology）、工程（Engineering）、以及數學（Mathematics）。STEM 教育的重點，是學校透過真實的環境，鼓勵同學運用綜合的數理、科學和人文能力，去探索、尋求和提出最佳或有創意的問題解決方案，建立高階多元評判性之思維能力，從而培育同學 21 世紀所需要的素養和能力。

在香港的小學中，高小學生開始有更多以英文教授有關科學的恆常課程。然而，一般社經地位較低的學生往往在家中缺乏英文學習資源和語境，令他們的英語語言或閱讀能力追不上學校課堂的進度。因此，英語的落後可能影響他們未來在以英語授課的 STEM 科目中的表現，令有才華的學生因為語言的限制未能發展才能，並有機會成為低成就學生。這些有才華的學生往往在綜合成績未如理想，一方面間接令老師及學校難以察覺其潛能，另一方面也減少學生的發展機會，例如未參加 STEM 校隊，使英語能力不足可能成為學生發展才華中的一項障礙。

跨學科專題研習

以 STEM 進行跨學科專題研習，能打破舊有課程上的限制，讓同學主動參與，令學習的過程更加靈活和多樣化，把知識融入生活之中。教育局在 2014 年的《基礎教育課程指引─聚焦·深化·持續（小一至小六）》亦指出，專題研習亦能令學生增進知識、提升學習能力，更提高了學生的探索好奇心、學習的內在動機，以至學習態度。加上，跨學科的閱讀有助提升閱讀的趣味性，在跨學科專題研習之上加入英文元素，更能使學生因為對 STEM 的興趣，引起學習英語的與興趣及動機亦配合教育局「跨課程語文學習」的重點。培養良好的英語閱讀能力，除有助同學以英語去表達概念，並廣泛地理解世界各地的科研知識外，更能讓學生建立閱讀英語的習慣和興趣，有好奇心及持之以恆地吸收不同的跨學科知識和新概念。

生活經驗為本的學習

專題研習的設計亦為學生帶來了生活經驗為本的學習。本課程參考了高大衛 (Kolb, 2017)的經驗學習法，給合生活與學習，讓學生在生活的經驗中分享和反省，深入處理和轉化。例如加入近年學生在防疫方面的日常生活經驗，教授疫苗、空氣傳播等的英語詞彙及知識，使以生活經驗為本的學習是真實而有意義。經驗學習法強調是的學習以經驗為起點，過程中透過分享和反省，深入處理和轉化 深入處理和轉化，再把所學到的轉化到真實生活裏，從而增強學生的學習動機、投入度以及負責感的。

同儕互評建立學習社群

專題研習亦包含學生匯報以及展示成品，並讓學生有機會互相討論活動內容、反思學習成果、學習如何欣賞和評鑑別人的成果，並做作出適當的回饋。

在這樣的互評活動中，能鼓勵學生的社交互動，更使學生有有機會反思學習過程。一些實證研究更指出同儕互評有助於提高學生的信心和創造力(Falchikov，1988)，通過同儕互評亦能在在課程中表現出越來越高的創造力水平（Sluijsmans et al., 2002; Tsai & Liang，2009）。

課程目的

「『閱』STEM『悅』加分」(STEM Up Reading Fun) 是第二層次以抽離方式在正規課堂以外進行特定範疇的延伸課程，為才華未展的四年級學生「拔尖」，同時「補底」。這些學生於 STEM 的科目有高於水平的能力。這課程不但發展同學 STEM 的才能，還加強同學的英語閱讀能力。閱讀 STEM 材料後進行製作，多元化的學習形式提高學生的學習興趣，以學習者為中心。運用他們 STEM 的優勢，帶動他們學習英文的動機。

課程目標

1. 加強學生閱讀不同英文文體或 STEM 閱讀材料的能力和興趣
2. 提高他們在科學、技術、工程和數學科目中常見的詞彙量。
3. 以生活經驗或問題為本的學習，發展學生科研的能力
4. 學生設計或動手製作有創意或可行的產品，發揮創意和創造力
5. 使具有相似 STEM 天賦或英語方面具有相似學習需求的學生，探索和識別他們的興趣和優勢。通過討論、分享或展示成果，培養自勵互勵的態度。

評估

1. 增潤課程前後將進行以英語編寫的 STEM 特定課題測驗，以評估英文閱讀 STEM 材料和 STEM 特定課題的表現。
2. 問卷將在課程前後分發給學生，以評估課程目標的成效。

挑選學生準則

1. 比較去年期末評估中的英語成績與 STEM 科目成績，在 STEM 科目中獲得 A 或 B 級，但在英語中獲得 B 級或以下成績的學生將被提名。

   (原因：這些學生在家中缺乏英文學習資源和語境。他們的英語語言或閱讀能力可能影響他們未來在以英語授課的 STEM 科目中的表現，希望預早裝備他們和幫助他們建立閱讀科學文本的習慣和能力，熟悉有效的閱讀要領。)

2. 有參加 STEM 校隊選拔，不被獲選，但老師認為有潛能或有高於平均水平的能力，將被提名。

   (原因： 開放課程給更多有才華的學生。這些學生有創造力、有熱情、有學習動機、有承擔。提供平台給他們發展才能和加強英文閱讀水平和習慣，預早裝備自己。在 STEM 中取得優異成績需要大量的跨課程閱讀，因此，英語對於在 STEM 科目或事業中取得成功至關重要。)

3. 老師透過觀察、平日的學業評估、或學生其他表現，提名於 STEM 科目才華未展的小四學生。

   (原因：他們過往一至三年級沒有參加 STEM 相關的資優課程，有才華的小四學生過往有機會欠缺平台。高小有更多以英文教授有關科學的恆常課程，這課程可促進這些學生初小和高小的銜接。)

課程大綱

本課程包含 15 個學習小時，包括 10 個教學小時（10 節課，每節課 1 個小時）

和 5 個學習小時（每節課後 0.5 個小時的自學）。

課節	活動目的/內容	課堂目標
1 (60 分鐘)	課程介紹 內容: 進行問卷調查，了解學生對 STEM 科目與英語學習之間關係的看法、對課程的期望以及他們 STEM 科目主要有興趣的領域	1. 使具有相似 STEM 天賦或英語方面有相似學習需求的學生，探索和識別他們的興趣和優勢。
課節 2-4 文件夾面罩 教學目標：: 認識病毒傳播的途徑，設計和製作一個可以阻隔大粒子飛沫的面罩。		
2 (50 分鐘)	內容: **1.** 引入（5 分鐘） • 教師展示疫苗成份圖片，以疫苗成分作引入，引起學生學習動機。 • 教師提問：疫苗出現的原因是甚麼？並邀請學生分享答案。 • 教師教導「疫苗」的英文詞彙。 **2.** 疫苗的起源及詞彙教學 （20 分鐘） • 教師播放與疫苗有關的影片，讓學生初步了解疫苗的起源：https://www.youtube.com/watch?v=E_PKQ_M7AtU • 學生分成 2-4 人一組，教師派發有關疫苗起源的文章，讓學生結合影片內容，閱讀和認識疫苗的起源及有關傳染病，學習預防疾病的課題。 • 教師指示學生先略讀文章，並圈出不認識的字詞。 • 教師教授文章中的難字（英文詞彙），並讓學生把字詞紀錄在筆記本上。	1. 學習有關疫苗、透過空氣傳播的傳染病的英語詞彙 2. 閱讀信息類文體，例如文章、人物傳記，加強學生閱讀不同英文文體或 STEM 閱讀材料的能力

	• 學生再次閱讀文章，2 分鐘小組討論——找出疫苗出現的原因。 **3.** 病毒傳播（20 分鐘） • 提問學生：世界最近出現了甚麼傳染病？（Covid-19）這個傳染病通過甚麼途徑傳播疾病？引導學生明白病毒通過空氣傳播的問題。 • 教師提問學生：有哪些傳染病是通過空氣傳播的？板書紀錄學生答案。 • 教師指出季節性流行性感冒（Seasonal influenza）、嚴重急性呼吸系統綜合症「沙士」（Severe Acute Respiratory Syndrome (SARS)）、2019 冠狀病毒病（COVID-19）等都是通過空氣傳播疾病，並教授相關英文詞彙。 **4.** 總結（5 分鐘） 1. 教師提問學生：「我們可以如何預防相關疾病？」從而讓學生了解相關的防疫措施，提高個人衛生及防疫意識，並為下一課節「製作面罩」作準備。	
3 (60 分鐘)	**1.** 引入（**10** 分鐘） • 教師講解課堂目標：設計和製作一個可以阻隔大粒子飛沫的面罩。 • 教師展示不同口罩的圖片，並提問及講解他們學生不同口罩的防護作用。 口罩　防護作用 - N95 口罩　過濾效率 95% - 能過濾環境中的懸浮粒子、病菌病毒 - 能阻擋 95% 0.3 微米以上微粒 - 外科口罩　能阻擋 95% 5 微米以上微粒 - 能隔絕 90%以上飛沫 - 能過濾環境中的粉塵、細菌 - 海綿口罩　能阻擋大型灰塵及異物 **2.** 動手製作（**45** 分鐘） • 教師介紹文件夾面罩的運作原理，並講解製作的步驟。 • 教師提問學生：我配戴的口罩與你的口罩有甚麼分別？讓學生意識到口罩大小的問題，並在及後設計中量度適當的大小。 • 教師派發設計工作紙，讓學生先自行設計口罩（如：大小、繩子的長度、款式等）。 • 教師派發相關製作材料，根據製作步驟引導學生完成活動。	1. 以生活經驗為本的學習，發展學生科研的能力 2. 設計或動手製作有創意或可行的產品，發揮創意和創造力

	3. 總結（5 分鐘） • 不同口罩的防護作用不同，在疫情下我們該選擇一個合適的口罩。 • 指示學生回家完成口罩，並在下堂交回。 教具/備註: ·油性水筆 ·釘書機 ·膠紙 ·皺紋膠紙 ·剪刀 ·直尺 ·A4 文件夾 ·活動冊 ·Google Site	
4 (60 分鐘)	**1.** 學習成品展示（**15** 分鐘） • 學生在組內分享文件夾口罩的製作成品。 • 邀請學生作分享、其他學生給予回饋、教師給予口頭回饋。 **2.** 反思學習（30 分鐘） • 與學生討論活動內容，反思學習成果。 • 就教師指示及提示問題，小組分享進行 STEM 任務的困難、解決方法及收穫。（如：在製作口罩時，你遇到最大的困難是甚麼？你會如何解決？） • 教師邀請每一小組就小組討論內容作出分享 • 教師總結及給予口頭回饋。 3. 評估工作紙（15 分鐘） • 學生完成評估工作紙。 STREAM 應用元素 S: 病毒傳播的途徑 T: 防護面罩的應用，使用電子平台分享面罩的成品和完成評估工作紙 R: 閱讀有關疫苗的起源 E: 動手製作文件夾面罩 A: 運用塑膠創作面罩光滑的質感 M: 量度（厘米）和周界	1. 分享進行 STEM 任務的困難、解決方法及收穫 2. 學習如何欣賞和評鑑別人的成果，並做作出適當的回饋。
課節 5-7： <u>空氣淨化機</u> 教學目標: 以香港空氣污染問題作引子，提出解難方案——動手設計和製作空氣淨化機，以改善室內的空氣質素。		

5 (60 分鐘)	**1.** 引入（5 分鐘） • 讓學生運用思維導圖整合對「香港的空氣質素」的聯想，在紙上寫下相關概念詞。 • 邀請學生分享 • 講解課堂目標：了解香港空氣污染問題，並學習有關空氣、空氣污染、污染影響等的英文詞彙。 **2.** 閱讀新聞文章，了解香港污染情況（15 分鐘） • 教師帶領學生閱讀有關香港空氣污染的新聞文章，讓學生了解香港空氣污染的情況: https://www.scmp.com/news/hong-kong/health-environment/article/3148848/hong-kong-air-pollution-hits-highest-mark-serious • 教師教導學生有關空氣、空氣污染的英文詞彙（如 Air pollution, pollutants, fine particulates），並讓學生把字詞書寫在筆記本裏。 **3.** 認識空氣污染對市民的影響（15 分鐘） • 教師展示圖片作出提示，並提問：空氣污染對市民有甚麼影響？ • 教師派發相關文章，指示學生找出相關空氣污染的影響。 • 教師教導相關影響的英文詞彙，如損害健康，引致哮喘（asthma） **4.** 針對空氣污染的應對措施（15 分鐘） • 學生分 3-4 組，討論針對空氣污染的應對措施，包括個人、機構、政府等持份者。 • 學生分享組內討論成果 • 教師給予回饋 **5.** 總結（10 分鐘） • 總結課堂所學：重溫有關空氣、空氣污染的英文字詞 • 指示學生搜集更多與此課堂內容相關的資料——全球空氣污染問題情況。	1. 學習有關空氣、空氣污染、污染影響等的英語詞彙 2. 閱讀信息類問題，例如新聞文章，增強學生閱讀不同英文文體或 STEM 閱讀材料的能力學生按個人的興趣，搜集更多與課題相關的資料
6 (60 分鐘)	**1.** 引入（10 分鐘） • 教師講解課堂目標：動手設計和製作空氣淨化機，以改善室內的空氣質素。 • 教師展示不同空氣淨化機的圖片，並簡單講解空氣淨化機的運作原理，讓學生對此有初步了解。 **2.** 動手製作（45 分鐘）	1. 以問題為本的學習，發展學生科研的能力 2. 設計或動手製作有

	• 派發材料，指示學生根據製作步驟引導學生完成活動。 • 依照設計循環的程序，透過測試產品和討論，改善設計，以提升空氣淨化機的效能。 **3.** 總結（5 分鐘） • 指示學生回家完成空氣淨化機 教具： ·油性水筆 ·釘書機 ·膠紙 ·皺紋膠紙 ·剪刀 ·直尺 ·風機 ·濾網 ·裝飾 ·活動冊 ·Google Site	創意或可行的產品，發揮創意和創造力
7 (60 分鐘)	**1.** 學習成品展示（15 分鐘） • 學生在組內分享空氣清新機的成品。 • 邀請學生作分享、其他學生給予回饋、教師給予口頭回饋。 **2.** 反思學習（30 分鐘） • 與學生討論活動內容，反思學習成果。 • 就教師指示及提示問題，小組分享進行 STEM 任務的困難、解決方法及收穫。 • 教師邀請各小組就小組討論內容作出分享 • 教師總結及給予口頭回饋。 3. 評估工作紙（15 分鐘） • 學生完成評估工作紙。 STREAM 應用元素 S: 空氣的流動及物料的特性 T: 空氣淨化機的結構和原理，使用電子平台分享空氣淨化機的成品和完成評估工作紙 R: 閱讀有關香港空氣污染的情況 E: 設計及動手製作空氣淨化機 A: 選用適當的美術工具和技術美化空氣淨化機的外型 M: 量度物料的長度和闊度 教具/備註: ·油性水筆 ·釘書機 ·膠紙 ·皺紋膠紙 ·剪刀 ·直尺 ·風機 ·濾網 ·裝飾 ·活動冊 ·Google Site	1. 分享進行 STEM 任務的困難、解決方法及收穫 2. 學習如何欣賞和評鑑別人的成果，並做作出適當的回饋。

課節 8-10 <u>自動養殖瓶</u> 教學目標: 利用水的特性，設計和製作一個自動澆水的裝置。		
8 (25 分鐘)	**1.** 引入（5 分鐘） • 教師提問：你們曾種植植物嗎？及後邀請學生做分享。 • 教師以卷柏獨特的生長方式作引入，幫助學生認識水對植物生長的重要性。 **2.** 植物的生長（20 分鐘） • 讓學生認識植物怎樣吸收水分來維持生命。	1. 學習有關植物、水的性質、植物吸收水分的方式等的英語詞彙 2. 閱讀信息類文體，例如實驗報告，增強學生閱讀不同英文文體或 STEM 閱讀材料的能力 3. 學生按個人的興趣，搜集更多與課題相關的資料
9 (55 分鐘)	**1.** 引入（10 分鐘） • 教師講解課堂目標：設計和製作一個自動澆水的裝置。 • 教師介紹自動養殖瓶的運作原理。 **2.** 動手製作 （45 分鐘） • 派發材料，根據製作步驟引導學生完成活動。 教具： <u>自動養殖瓶</u> · 油性水筆 ·鋏板 ·鋏刀 ·膠紙 ·雙面膠紙 ·直尺 ·植物和泥土 ·飲管 ·樽蓋 ·清水 ·廚房用紙 ·透明膠樽 ·彩麗皮（EVA） ·絨毛鐵線 ·粗棉繩	1. 以問題為本為本的學習，發展學生科研的能力 2. 設計或動手製作有創意或可行的產品，發揮創意和創造力

	·活動冊 ·Google Site	
10 (60 分鐘)	**1.** 學習成品展示（15 分鐘） • 學生在組內分享自動養殖瓶的製作成品 • 邀請學生作分享，作簡單回報，教師邀請其他學生給予回饋，教師給予口頭回饋。 **2.** 反思學習（30 分鐘） • 與學生討論活動內容，反思學習成果。 • 就教師指示及提示問題，小組分享進行 STEM 任務的困難、解決方法及收穫。 • 教師邀請每一小組就小組討論內容作出分享 • 教師總結及給予口頭回饋。 **3.** 評估工作紙（15 分鐘） • 學生完成評估工作紙。 STREAM 應用元素 S: 毛細管現象 T: 自動養殖瓶的結構和原理，使用電子平台分享自動養殖瓶的成品和完成評估工作紙 R: 閱讀並認識有關毛細管現象的應用 E: 動手製作自動養殖瓶 A: 用幾何形狀和不規則形狀構圖 M: 量度長度和闊度、圖形的分割和拼砌	1. 分享進行 STEM 任務的困難、解決方法及收穫， 2. 學習如何欣賞和評鑑別人的成果，並做作出適當的回饋。

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School based enrichment program for The Education University of Hong Kong Jockey Club Primary School "Becoming a YouTuber[1]"

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Background, Theory and Framework

Underrepresented talents in language because of the summative assessments

Summative assessment is one of the most common strategies for schools to evaluate the learning outcome of students. However, using a standardised test to measure a student's language skills may not represent the student's actual ability. Tsai & Tsou (2009) suggested that standardised English language proficiency tests do not reflect what is learnt and taught in the classroom. Wiliam (1996) also indicated that students' performances in standardised tests do not necessarily equal what the students can do in real-life tasks. As the English exam in Hong Kong tends to focus on dictations, grammar and rote memorisation (Poon, 2010), students who are talented in language and creativity can never have good grades in the exam. They will then be underrepresented and lose the opportunity to develop their talents further.

Whole school approach and Self-nomination

The Education Commission recommended in its Report No. 4 the concept of the Whole School Approach in inclusive education in 1990 (EDB,1990). The whole

[1] This purpose of this programme does not include encouraging or training students to become a "YouTuber" that makes money from it or as an occupation. The term "YouTuber" here is more like a representative term as a video maker who produces meaningful contents consistently. Also, the term "YouTuber" is used because of its popularity and students' familiarity with it. Although "becoming a YouTuber" can be a good dream for primary students, it is important for them to understand the meaning and preparations needed behind it. Otherwise, they may assume "YouTuber" is an occupation that allows them to make money by travelling or playing online games with ease, thus being reluctant in learning.

school approach aims to provide learning opportunities for students in every aspect of their school life. Especially for students with special educational needs should also have equal opportunities to participate actively in school. This program is organised within the concept of inclusive education in a Hong Kong primary school. From a particular perspective, programs for gifted students can be seen as segregation, a departure from the concept of inclusion. However, from the inclusive point of view, the enrichment program creates maximum opportunities for gifted students who are a part of the students with special educational needs to develop their potential. To better select the students to participate in the enrichment program, self-nomination will be one of the selection criteria to maximise the students 'learning opportunities and prevent the missing out of the gifted students.

Gifted students in inclusive education

In this programme, we recognise that there are gifted students whose intellectual capacity, learning rate, and potential for creative contributions demand experiences apart from, but connected to, the regular classroom. These students exhibit high performance, the potential to achieve in intellectual, creative, or artistic areas, or excel in specific academic fields. It is essential to provide diverse, appropriate, ongoing learning experiences and environments incorporating students 'academic, psychological, and social needs. Becoming a "YouTuber" is a dream of many of these students nowadays, so it is our responsibility to ensure the ongoing identification of gifted and talented students and to provide those students with appropriate and systematic educational services to teach, challenge, and expand their knowledge.

Self-determination Theory

Self-determination Theory (SDT) is adopted in this program. SDT suggests that people can become self-determined when their needs for autonomy, competence, and connection are fulfilled (Ryan and Deci, 2002). This perfectly fits our school mission to continuously improve the quality of learning and school life for the well-rounded development of children in an environment of joy, love and care. In other words, our school does our best to let the students feel the following in to achieve psychological growth. The program's missions are developed according to the needs for autonomy, competence, and connection in SDT.

1. ***Autonomy***:

Students learn to understand more about themselves as individuals, explore their talents, and execute their talent with confidence. For example, they will comprehend and respond to different text types and use spoken means of expression to convey information and perform and explain and describe in detail their talent. Students can also evaluate their progress by reviewing over time and note the improvements or lack of it in areas such as accuracy organisation, performance levels and correct use of the English language.

2. ***Competence***: Students will improve their confidence and language skills when using English in speaking and performing during the course. Interactive platforms will be used for students to evaluate their competence by reflecting on their progress.

3. ***Connection*****:** Students will develop open mindfulness with other students with different styles and performance skills. They will also, in return, be exposed to new talent types and performance styles. Great rapport is also expected to be established among the students. Students having similar talents can help and support each other

when producing the videos to develop leadership and collaboration skills.

Project-based learning

Project-based learning is a student-centred teaching method for students to gain more profound knowledge through active exploration of real-world challenges and problems. Also, it has a positive impact on students' attitudes towards learning, work habits and problem-solving capabilities (Thomas, 2000). In this program, the trial for students to be YouTubers provides an opportunity for students to learn through a project. For instance, being a YouTuber requires the student to release videos consistently. By asking students to release videos consistently, it gradually releases responsibility to the students. Students can develop their work habits and time management skills through the project.

Interdisciplinary learning

Interdisciplinary learning is the teaching method to integrate multidisciplinary knowledge into one program. By creating videos, students have to go through different procedures like video filming, subtitling and video editing. Therefore, various skills like language skills, video editing skills and photography techniques can be trained in this program. Research has proved that interdisciplinary learning with language and science can improve language skills in both written and oral forms (Engelbret, 2015). It is believed a similar approach in this program can also make a success.

Program goals

1. To improve students' basic presentation skills (e.g. eye contact; projection; content) and English presentation skill
2. To let students to have some hands-on experiences in video editing, improving their IT skills
3. To improve the self-confident of the students
4. To help students re-evaluate the meanings of their dreams to be a youtuber via the understanding and experiencing the differences of becoming a YouTuber and a video maker
5. To understand the importance of persistency in learning and achieving their goals

Evaluation

1. Pre- and post-tests of English ability will be adopted to evaluate students' progress.
2. A checklist will be used to assess students' presentation and IT skills before and after the programme.
3. Questionnaires, interviews and self-evaluation will be used before and after the programme to evaluate the motivation of the students

Selective Criteria

In this programme, 15 to 20 students from grade 4 to grade 6 will firstly be encouraged to self-nominate. At the beginning of each semester, when students are asked about their dreams, some of them will say that they want to become a

"YouTuber" with certain unhesitatingly. These students will be selected if they achieve C grade or above in English summative assessments. It is because we think that those students who self-nominate in joining this programme may be underachieving in their English talent because the low grades they got in summative assessments and this would not happen in this gifted programme. Then, if there are still some vacancies after self-nomination, English or class teachers can help to select those who have a certain talent but hardly show to others due to their characters (e.g. too shy) or special needs.

Program Content

This program contains 10 learning hours, including 4 teaching hours, (in 4 lessons, 1 hour each) and 6 study hours (1.5 hours for assignment after each lesson). The overview of lessons is shown in below:

Lesson	Activities	Learning Goal(s)
1 (60 mins)	Theme: Writing skills + Presentation skills 1. Brief introduction of the programme (5mins) • Briefly introduce the lesson 2. Pre-test (15mins) • Each student will be given a topic related "talent", they need to write down some relevant vocabulary and have a speaking test. Teacher will evaluate their English ability with rubric. • Students will be asked 3 questions on video editing skills. 3. Writing skills: self-introduction, writing the script and create a storyboard (20mins) • Teacher will show two short video and the script of self-introduction to students and they need to evaluate which one is better.	1. To enhance students' writing skills of self-introduction 2. To assess students' presentation and IT skills before the programme 3. To enrich students' basic presentation skills (e.g. eye contact; projection; content)

	• Group discussion on the elements that a good self-introduction should included • Students are required to write down their talent and relevant vocabulary on the e-learning platform Padlet, then share their ideas in group and later in the whole class. • Students write a short paragraph about their talents. 4. <u>Presentation skills (15mins)</u> • Introduction of basic presentation skills such as eye contact, projection • Mini task: students will be divided into group, then discuss and present the content by using the skills learnt. 5. <u>Plan for your own video clip (5mins)</u> • Teacher introduces the topic of video clip • Students plan their own video clip by following the guideline: (a) think of your individual talent, (b) opening, (c) content of the video such as how would your talent be performed in the video clip?	
2 (60 mins)	Theme: Video editing skills 1. <u>Introduction of video editing skills (15mins)</u> • Introduction of video editing programmes • Introduction of some important terms in video editing (e.g. Jump cuts, match action, cutaways) to familiar themselves with video editing 2. <u>Trials on video editing (40mins)</u> Students will learn the following skills in the lessons • Create a basic timeline: placing the clips in the order that students want to use • Splitting clips • Layering the story • Adding audios/background music	4. To enrich students' basic knowledge of video editing 5. To enhance students video editing skills through hands-on experiences in video editing

	• Adding titles/ subtitles 3. <u>Conclusion (5mins)</u> • Summarize the skills learnt • Task for students: take a video and try to organize their video clip	
3 (60 mins)	Theme: Finalize the video clip 1. <u>"What makes a good YouTuber?" (15mins)</u> • Identify the elements of a good video • Teachers plays two videos from different YouTuber, one with more views and another one with less views. • Identify the elements of a good video (hints: contents, the usage of music and subtitles etc) 2. <u>Finalize the video clip (40mins)</u> • Students finalize their own video clip with the support from the teacher 3. <u>Conclusion (5mins)</u> • Remind students to prepare for presentation of the video clips.	1. To develop differentiation skills through comparing the elements included in different video 2. To identify the elements needed in a good video
4 (20 mins)	Theme: Presentation of the video clips 1. <u>Presentation of the video clips (40mins)</u> • Each student show and present their final production • Other students give feedback for their classmates after watching the video 2. <u>Overall feedback for students (5mins)</u> • Evaluation on students' presentation and video production • Appreciate their effort put in this programme 3. <u>Post-test (15mins)</u>	1. To let students demonstrate their understanding to themselves, students and the teacher 2. To enhance students' confidence in using English in speaking 3. To assess students' presentation and IT skills after the programme

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School based enrichment program for Tung Wan Mok Law Shui Wah School "Expression" – A visual art enrichment programme

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Background, Theory and Framework

Underrepresented of talents among underprivileged students

Underprivileged students with high ability face a lot more challenges than other students in talent development. Families of underprivileged students usually do not have enough resources to support the talent development of the students. The talent of the underprivileged students is likely to be underrepresented. A remarkable number of underprivileged students with high ability are left behind without getting suitable education support, resulting in different levels of underachievement.

As a special school for underprivileged students, our school offers opportunities for students to learn better in a small group learning environment with more support. Our students are mostly from low socio-economic families with parenting issues. Underachieved high ability students at our schools are commonly seen. We hope to unleash these students penitential and help them go back to mainstream school by building up their learning motivation.

Underachieving talents because of boredom in school

Besides lacking resources, there are also several reasons leading to the underachievement of the high ability students. High academic pressure and unsuitable pedagogical approaches were found as the causes for the underachievement (Tsai & Gu, 2016; Whitmore, 1980). Students lose their learning motivation and do not exhibit any behaviour to change the current situation. While learning is the opposite of

boredom Kanevsky & Keighley, 2003), not learning at school may lead to students' boredom. Underachiever. Siegle and McCoach (2018) mentioned that underachievement might hamper the individual's life pursuit of self-actualization. If the student cannot get satisfaction in the learning process, they will lose their interest in learning. It results in a failure to reach his/her own potential. Therefore, a programme to cater to the underachiever with high potential will be designed and assist the underachiever in finding out the meaning of learning.

Project-based learning

According to the Project-based learning handbooks for teachers, Project-based learning is the teaching method that engages students to work on real-world problems and create final products for the audience at the end of the project (Citation). It involves the design, problem-solving, decision-making, and investigative activities and allows students to work autonomously over extended periods. At the end of the project, students have to explain the idea in realistic products or presentations (Jones, Rasmussen, & Moffitt, 1997; Thomas, Mergendoller, & Michaelson,1999). Adopting project-based learning in this program allows students to discover the knowledge in depth according to their interests actively. Independent learning motivation is also cultivated.

Moreover, as a boarding school, many of our students live in the dorm and do not have much experience outside of school. Lacking real-life experience also reduces the application of knowledge to the real world. Project-based learning connects the textbook knowledge to a real-life problem, which allows students to apply their knowledge in real-life and trains the students ’problem-solving skills and critical thinking in response to the rapid development of the world.

Design thinking

Design Thinking is an iterative process in which we seek to understand the user, challenge assumptions, and redefine problems to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. At the same time, Design Thinking provides a solution-based approach to solving problems. It is a way of thinking and working as well as a collection of hands-on methods. Avcu & Er (2020) suggested that design thinking positively affects students' academic learning, cognitive, affective and social skills.

For gifted students who are highly creative, other people may not understand their way of thinking (Torrance, 1984). By adopting design thinking into the program, students will be guided to create an art piece through the 5 stages of the design thinking process 1) empathise, 2) define, 3) ideate, 4) prototype and 5) test (Dam and Siang, 2018). It helps the students to create the artwork step by step with their own idea and research. Students can also challenge the traditional way of thinking and try to break out of the traditional thinking mindset. The artworks as the final products are not created only for developing a sense of beauty but also to increase the motivation and eyesight of the student since the student will learn and discover the information by themselves with guidance.

Self-directed learning

Self-directed learning is also expected to be initiated in this program. It is a way of learning that the students direct the conceptualization, design, conduct and evaluation of a learning project (Brookfield, 2009). Self-directed learning is suggested to enable gifted students to do in-depth investigations into real-world problems (Van Deur, 2004). Different self-directed learning materials and activities will be provided for the students. For example, gaming, mind maps and data collection. It is hoped the

students can learn in a more interesting pedagogical approach and increase their learning motivation. At the same time, it allows students to explore the information by themselves when they need it and are ready to become lifelong learners.

Enhancing social, emotional development via drawing

For students who are gifted in art and draw often, they can express greater detail about a subject than other students (Machusic,2014). Machusic (2014) also mentions that the young gifted students are more inventive in their drawing and sculpture than other children. By creating artwork in this programme, it is expected to express the emotion into the artwork and enhance their emotional development.

Moreover, underprivileged students tend be lack of self-confidence (Filippin & Paccagnella, 2012) . It is believed the students 'self-confidence can be built up by developing their talent. With different creative projects adopting the design thinking, student would be able to develop their strengths and enhance their learning motivation. At the end of each project, the ark works delivered by the students will be gathered to have a small exhibition. Students have to introduce their art works. Presentation skill and communication skills to will also be improved during their presentation.

Program goals

1. To figure out and explain the problems that the world is undergoing
2. To help students to explore and understand the problems that they are facing through self-evaluation
3. To enhance students 'ability in self-learning in exploring more details on the problems they found

4. To enhance students ’ability in expressing their emotion through artworks
5. To enhance students ’self-confident in expressing their idea

Evaluation

An art pre-post test will be given before the enrichment programme to evaluate the performance in art skills and creativity. Also, the programme goals will be evaluated through the pre-test. The final product of each project is for reviewing the programme goal after the enrichment programme.

Selective Criteria

There is a test for all students (From P2 to P6) to evaluate their art skills and level of creativity which is the same paper with the evaluation test. (see attached) The outstanding students will be selected based on the result of the test paper.

The interest and willingness of the students will be considered. It is very important that the students are willing to join the program with showing their interests in the subject. The teacher may conduct an intake meeting to explain the goals and expectations of the enrichment programme. During the meeting, teacher can show the students their potentials and how the program would further develop them. Teacher and students are getting mutual agreements to commit in joining this program.

Program Content

There are four projects in total, project one is the Inventor. The content or the theme of project two to four will be designed after project one. It will be reviewed based on

students ’ability and interest after each project. The next project will be designed based on the review of each project.

This program contains 25 learning hours, including 20 teaching hours, (in 20 lessons, 1 hours each) and 5 study hours (15 minutes for assignment after lesson).

The overview of lessons of project One -- Inventor is shown in below:

Lesson	Activities	Leaning Goal(s)
1 (60 mins)	Theme: Understanding about the world 1. <u>Pre-test (20mins)</u> • Students will be given a topic to test students’ arts skills and creativity 2. <u>Explain the problems that the world is undergoing (20mins)</u> • Teacher will introduce different problems around the world (e.g. Global warming, starvation) • Inviting students to share their feelings 3. <u>Presentation on the problems that students found (20mins)</u> • Students sharing based on two aspects (a) Individual problem that they are facing (b) Problems in the world • Feedback from classmates and teachers • Students decided a problem that they would like to solve or to raise public awareness Homework: Research on the details of the problems and find out the solution	1. To figure out and explain the problems that the world is undergoing 2. To explore and understand themselves (problems that students are facing) through self-evaluation 3. To enhance students’ ability in self-learning in exploring more details on the problems they found

2 (60 mins)	Theme: Preparation and Draft 1. <u>Presentation on solution (20mins)</u> • Students present on the solutions of the problem found 2. <u>Discussion on students' presentation (10mins)</u> • Discuss on students' discussion questions • Students express their feelings towards different problems • Feedback from students and teachers 3. <u>Students plan for their work (25mins)</u> • Students try to draft the product/artwork to present the problem or the solution • Feedback from teacher 4. <u>Debriefing (5mins)</u> • Self-evaluation	1. To enhance students' critical thinking skills in evaluating the solution of the problems 2. To express their feeling through creating artwork
3 (60 mins)	Theme: Design the artwork 1. <u>Students create the artwork (50mins)</u> • Students design the product based of their research and feelings • Teachers will guide them during the process 2. <u>Debriefing (10mins)</u> • Evaluate on the difficulties that they are facing during the process	1. To enhance students' ability in expressing their emotion through art

4 (60 mins)	Theme: Presentation skills 1. <u>Refining the design of the product (20mins)</u> • Students briefly present their products • Students refine the design of products based on the feedback from teachers or classmates 2. D<u>rafting the presentation script (15mins)</u> • Teacher will introduce the guideline of the presentation script • Students draft the presentation script by illustrating their ideas of their artwork 3. <u>Presentation skills (20mins)</u> • Introduction of basic presentation skills such as eye contact, projection • Practice: students will be divided into group, then discuss and present the content by using the skills learnt 4. <u>Debriefing (5mins)</u> • Self-evaluation on their presentation and the final product of artworks	1. To enhance students' presentation skills
5 (60 mins)	Theme: Exhibition 1. <u>Small exhibition will be held at school</u> • Artwork created by students will be exhibited at school • Teachers and schoolmates will be invited to attend the exhibition • Students will share their ideas of creating the artwork	1. To enhance students' self-confident through introducing their artwork

2021-2022 年度 視藝科

100

姓名：　　班別：　　日期：

科學幻想畫

創作人類未來的生產及生活情景。

1. 現在有什麼難題/困難？（例：情緒不受控、功課很難、書包太亂……）

_____

_____

2. 你希望未來會有什麼新發明去解決現在的難題？

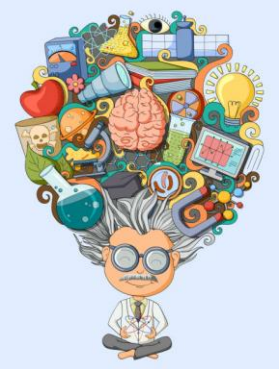
_____

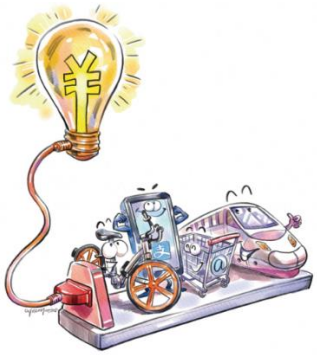
_____

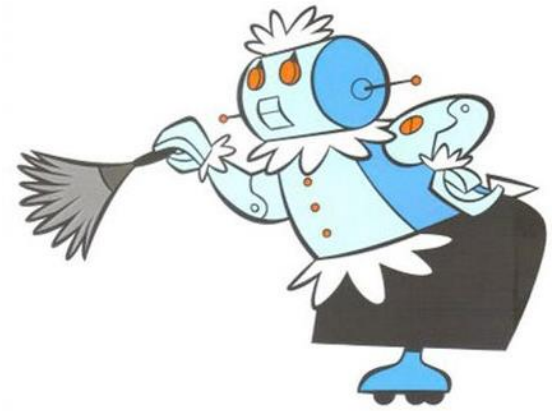
創作評分準則

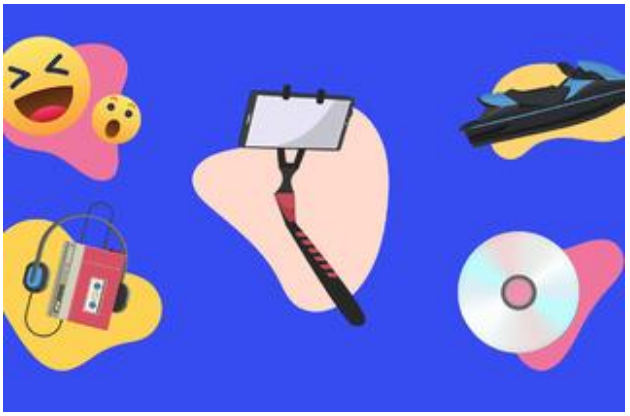
創作性	45%	
藝術性	40%	
科學性	15%	
	總分	

參考圖









創作

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School based enrichment program for United Christian College For underrepresented talent students in Mathematics because of the language variables

Tsui Ming Yan, Ivan,
Lui Ho Wai, Ken, Li Miao Hong Heidi, Kam Wan Man Ava

Background, Theory and Framework

English as a medium of instruction in Hong Kong

Schools in Hong Kong are divided into Chinese Medium of Instruction (CMI) and English Medium of Instruction (EMI). As Chinese is the Language 1 (L1) of most of the students in Hong Kong, students may not adapt to the English environment when they go to EMI schools. For instance, in Mathematics class, several S.1 students cannot even understand math word problems in English. Students with high Mathematical abilities may then be underrepresented as they fail to solving the math word problem because of English proficiency instead of mathematical skills. It has been suggested that high ability students with limited English proficiency are persistently underrepresented in advanced classes and in programs for students identified as gifted (NGAC, 2011). It results in failing to achieve their full potential because of insufficient language skills. The aim of the gifted program is to improve Mathematics-related English reading comprehension skills for S.1 students who are more capable in Mathematics but less adept in English.

Underrepresented students: language barrier & economic disadvantage

Underrepresented talented students usually refer to the students who are racial and ethnic minorities, English language Learners (ELLs) and those in low-income families

(Peter & Engerrand, 2016) with high ability. ELLs and students from low-income families received lower observed scores on tests of academic achievement and ability on average (Plucker et al., 2013; Valencia & Suzuki, 2001). Language is regarded as a major barrier to the performance in the underrepresented talented students because the specific language demands of the test.

Also, students in low-income families usually do not have extra resources to support and develop the students. It was found that countries with a less even or uneven distribution of economic resources among its citizens have lower average levels of achievement in the multi-nation mathematics data from the 2006 PISA study (Condron, 2011) which countries with more even distribution produce higher percentages of very highly skilled students and lower percentages of very low-skilled.

The medium of instruction and lack of resource made the underrepresented talented students difficult to be identified for special care and results in underachievement. This programme identifies the underrepresented talented students in math and provides extra resources to develop their comprehension skills when solving math word problems. This programme also reduces the learning inequality between students from low-income families and other students by fulling their educational need at school level.

Let students to show their talents in mathematic by improving the English skills - Interdisciplinary Learning

In order to improve the unrepresented students 'Mathematics-related English reading comprehension skills, Interdisciplinary Learning (IL) is going to be used. It was suggested that IL can'(a) forge connections to students 'prior knowledge and experience; (b) assist students in developing complex understandings in particular subject areas; (c) promote the development of sophistically views of knowledge and

learning; (d) influence thinking skills; (e) build students 'capacity to recognize, evaluate, and use differing (multiple) perspectives; (f) engage students interested and increase motivation; and (g) enact constructivist and active leaning strategies (Lattuca et al., 2004). This program is going to emphasize in teaching math word problems related English vocabularies and help the students to understand the questions. The Chinese mathematical terminology learned in primary school will be translated into English. For instance, it includes nouns and adjectives that often appear in mathematical textbooks, as well as useful expressions and measuring words to describe the size of a room or furniture. This builds a foundation for students to learn new mathematics concepts in English and connect students 'prior knowledge and experience.

Self-regulated learning

Self-regulated learning refers to one's ability to understand and control one's learning environment. Self-regulation abilities include goal setting, self-monitoring, self-instruction, and self-reinforcement (Harris & Graham, 1999; Schraw et al., 2006; Shunk, 1996). Self-regulation practices improve the encoding of knowledge and skills in memory, especially in reading comprehension and writing (Zimmerman, 2002). Therefore, self-regulated learning will be promoted to develop the students' English reading comprehension skills to enhancing solving math word problem in English. This program provides different learning resources, including digital and non-digital for students to study by themselves. To increase the frequency of self-regulated learning outside of the classroom, the materials are well-developed to enhance student's learning experience and interest to use. Students are also encouraged to ask questions individually, especially the problem related to the language problems, rather than passively gather knowledge from the teacher. Aligned with the ongoing regular

Mathematics lessons, it will also enhance the students' participation in the program and the self-regulated learning.

Multi-media input and interactive teaching method

Besides traditional learning materials, multi-media resources will be used. It includes the game-based environment, digital and non-digital learning resources and an A.I. online platform. The A.I. online platform is also adopted in English lessons to raise students' awareness of vocabulary building and learning. The platform is used in this program alongside English lessons to widen students' vocabulary.

A game-based environment will be applied to reduce fear and enhance motivation in learning as a number of students feel anxious when using English to learn Mathematics. Several studies have reported that game-based learning could enhance students' learning interest and motivation (Burguillo, 2010; Dickey, 2011; Ebner & Holzinger, 2007; Liu & Chu, 2010). The learning achievement and self-efficacy could also be improved by game-based learning.

Program goals

1. To let the students show their understandings and capacities in Mathematics.
2. To remove the student's language block in learning Mathematics and improve their understanding of math word problems in English by using interdisciplinary learning and multi-media resources.
3. To reduce students' fear in reading questions by utilizing games to enhance students' interests and motivation.
4. To promote self-regulated learning by providing well-designed materials and encouraging individual questions.

Evaluation

1. A Mathematic test in English will be given before and after the enrichment programme to evaluate the performance of the specific topic in Mathematics.
2. Questionnaires will be distributed to students before and after the program to evaluate the program goal.

Selective Criteria

The program targets metathetical talented S.1 students who mainly comes from CMI primary school. Students will be selected based on the Pre-secondary One Hong Kong Attainment Test (POHKAT). The POHKAT is a territory-wide assessment, which aims at assessing all Hong Kong Pre-S.1 students' overall abilities, including Chinese, English and Mathematics. Students who score at the top 30% in Mathematics, but score below 50 out of 100 marks in English language in my school will be selected. Although these students at the top 30% at the current school, it is believed that these students are underrepresented as talented in math due to the limited English proficiency. It is expected to improve their mathematical achievement after improving their English comprehension skills.

Program Content

This program contains 10 learning hours, including 5 teaching hours, (in 5 lessons, 1 hour each) and 5 study hours (1 hour for assignment after each lesson). The overview of lessons is shown in below: -

Lesson	Activities	Leaning Goal(s)

1 (50 mins)	Topic: Basic Mathematics Numbers: Arithmetic Operations, proper fraction, improper fraction and mixed number 1. <u>Starting of the course (10 mins)</u> • introducing the learning goals in the course • set up a learning goal (together with the students) • pre-test 2. <u>Brief introduction of the basic concept (20 mins)</u> • introducing the learning goals in the course • school-based learning materials are used to bridge the language gap from CMI to EMI. Arithmetic operations: • teacher introduces the English term of arithmetic operations (addition:add/plus, subtraction:minus, multiplication:times/multiplied by, division:divided by) • teacher asks 6 mathematic questions related to arithmetic operations verbally by using English, in order to check the understanding of students and whether they are familiar with the previous knowledge. Students write down their answer in their notebook. Proper fraction, improper fraction and mixed number: • teacher introduces the English term of proper fraction, improper fraction and mixed number. • teacher shows some of the proper fraction, improper fraction and mixed number on the screen and ask students to distinguish whether it is proper fraction, improper fraction or mixed number, students need to answer it in English. • teacher introduces the related vocabulary (i.e numerator, denominator) and the ways to pronounce fractions. • teacher shows some fractions on screen. Students listen to teachers' pronunciation and then determine the answer. • teacher invites students to create a fraction by themselves and invites some of them to pronounce	1, 2

	it in front of the whole class, other classmates try to answer the question. 3. <u>Role play time (15 mins)</u> • a Mathematics-related comic are used as a script for students. • Activity: 4 students in one group, each group will be given 1 comic/story that has a math question to solve. Two students from the group need to act according to the given material, the other two students need to figure out and solve the math question. 4. <u>Game time: self-study (5 mins)</u> • *SolidMemory* is used to widen the students' vocabulary. It is an A.I. platform to raise students' awareness of vocabulary building & learning. • Students have time to ask questions about the problems in the regular Mathematics lessons in order to cater the individual learning difficulties. Homework: Worksheet	2, 3 2, 4
2. (55 mins)	Topic: Direct Numbers and Number line 1. <u>Review the first lesson (10 mins)</u> • In-class competition: By using the online platform "Kahoot", a Q&A competition will be used to revise the content of the previous lesson (i.e. English term and related vocabulary of Arithmetic Operations, proper fraction, improper fraction and mixed number). 2. <u>Brief introduction of direct numbers and number line (20 mins)</u> • School-based leaning materials are used. It included comment terminology of the directed number. It also included different strategies to solve the word problems • Introduce the basic concept and the English term of direct numbers and number line • guide students to observe the patterns of number line (i.e. negative number on the left of the number line)	1 1, 2

	• introduce addition and subtraction of directed numbers on the number line. • students practise: teacher provides some questions related to direct numbers, student need to calculate the answer by drawing the number line. • Introduce different strategies to solve the word problems. • Student practise: solve the word problems by using different strategies 3. <u>Group study time (20 mins)</u> • Students are group in 3-4. Each group have to develop the strategy to solve the word problems. 4. <u>Game time: self-study (5 mins)</u> • *SolidMemory* is used to widen the students' vocabulary. It is an A.I. platform to raise students' awareness of vocabulary building & learning. • Students have time to ask questions about the problems in the regular Mathematics lessons in order to cater the individual learning difficulties. Homework – Textbook Exercise	2, 3 4
3. (60 mins)	Topic: Directed Number - Word Problems 1. <u>Review the second lesson (10 mins)</u> • English vocabulary in maths: by asking students directly • Application of number line: teacher show the questions on screen and students finish the questions on their notebook. 2. <u>Brief introduction of the basic concept (20 mins)</u> • Teacher shows the word problems and invite students to think of the strategies of transforming the word problems to mathematics equations • Teacher introduces some strategies to students, such as highlight the important parts of the text • Teacher guides the students to analysis the sentences structure of words problems	1 1, 2

	3. Group study time (25 mins) • Students in group of 3-4 classmates and create the work problems together • Students share their work problems in front of the whole class, other classmates calculate the answers without the help from calculator. 4. Game time: self-study (5 mins) • *SolidMemory* is used. • Students have time to ask questions about the problems in the regular Mathematics lessons. Homework – Worksheet	2, 3 4
4. (60 mins)	Topic: Sketch 1. Review the third lesson (10 mins) • Revise the strategies of transforming the word problems to mathematics equations, as well as the sentences structure of words problems. 2. Brief introduction of the basic concept (20 mins) • School-based learning materials were used. • Teacher introduce the contents of useful expressions & measuring words to describe the size of a room or furniture. (i.e. length, width, depth, height; millimeter, centimeter, meter) • Teacher introduces the basic concepts in geometry: points, lines and planes • Teacher shows some pictures of sketching and guide students to sketch some simple geometric figures. 3. Group study time (25 mins) • students work in group of three • Teachers guide the students to sketch together. 4. Game time: self-study (5 mins) • *SolidMemory* is used. • Students have time to ask questions about the problems in the regular Mathematics lessons.	1 1, 2 2, 3 4

	Homework - Worksheet	
5 (60 mins)	Topic: Geometry - Sketching 1. <u>Round up the programme (10 mins)</u> • summarize the knowledge that gained in the programme 2. <u>Game time: (5 mins)</u> • Introduce a game-based online learning platform to students, encourage them to learn themselves after the programme 3. <u>Evaluation of their study progress (30 mins)</u> • Self-evaluation • Questions to students: What have you learnt in the whole programme? Which part is the best and the worst? Any difficulties faced during the programme and if so, how you tackle it? Learning goals achieved? • Questionnaires will be distributed to students to evaluate the programme goal 4. <u>Post-test (15 mins)</u>	1 1 4

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Training organization:

Radboud University

Sponsoring organizations:

樂施會 OXFAM Hong Kong

中原慈善基金 CENTALINE CHARITY FUND

Supporting organization:

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