

## **Part C Project Details (2012/0227)**

### **Needs, Proposed Solution and Applicant's Capability**

#### **(a) Background**

The popularization of personal computer and internet technologies has been causing pressing demand on electronic learning (eLearning). A lot of effort has been put to facilitate eLearning in education. E-Textbook Market Development Scheme (EMADS) recently launched by Education Bureau in Hong Kong is a good example.

#### ***Need: Limitation of existing eLearning applications***

eLearning, in principle, should support not only one-way content delivery, but also collaborative and interactive learning. However, one of the common technology adoptions in eLearning, in general, is still supporting teachers to prepare materials for students in electronic format. The corresponding software applications may allow teachers to create and modify documents or powerpoint slides, and upload the files for students' retrieval. A limitation of such adoption is that the students may only know the key points the teachers want to address and/or the results of the questions. They may not be able to understand how the ideas or answers are derived. This may restrict students from gaining deeper understanding on the topics. Besides, it follows the traditional one-way communication from teacher to student. Students play the role to receive the contents that are defined and prepared by teachers passively. It cannot facilitate students to raise questions or provide new ideas, and may hinder students' creativity and motivation to learn.

#### ***Need: Desire on using mobile technologies to support primary education***

There is always high expectation on e-learning for new possibilities on more interactive content and the support of collaborative activities without physical limit. This is particularly relevant and viable for primary education as primary school students in general requires more motivation and activity-based support to facilitate their learning process. With such a need meeting the rapid growth of mobile devices which are featured by 1) high computing power to support multimedia content (e.g., photos, video, audio) capturing and production, 2) strong peripheral support such as touch screen, sensors (GPS, accelerometers, gyro) to enhance usability, 3) light weight and reduced size to be much more portable, and 4) its seamless connectivity to the Internet without wire, the goal of this project is to develop a cloud-based mobile platform – CIMPLE, by leveraging the mobile device's features to enrich

collaborative and interactive experiences on teaching and learning.

***Proposed Solution: Use of mobile technologies to provide collaborative and interactive learning environment***

While there exist related platforms developed by different units and companies, a key notion that we would like to stress on is that: apart from showing the static contents, CIMPLE can record the process to show how the contents are derived. Making use of mobile devices, e.g. iPad and Samsung Galaxy Note, users may write or draw the contents on the pad with their verbal narratives incorporated at the same time. And the whole process of concept illustration via multimedia means can readily be recorded and shared with the others in seconds. With a careful design on the user interface and due to the portability of mobile tablets, the target users of this content creation application are not only the teachers, but more importantly, can also be the students. For example, students may write their ideas on the pad for presentation, or draw a picture in the arts class to show to the other classmates how the picture were actually produced over time from the very beginning to completion. Similar ideas can be extended to story-telling where the voice of the students can also be recorded. In addition, the sensors embedded in the mobile devices allow students to input via hand movement, e.g., producing a shaking scene of a picture by real shaking. Given all these new possibilities on content production, other students may use the pad to provide feedback or even further develop the original ideas by writing or drawing on the work completed by another peer. During this process, students may, on one hand, play the role to deliver learning materials, and on the other hand also play the role to comment on the other peers' works. This interactive peer-to-peer teaching and learning process may enhance students' creativity, logical thinking, and initiative. Involvement of teachers or senior students to provide the learning materials may even support the juniors' development as suggested by Scaffolding Learning Theory and the Zone of Proximal Development [1].

***Proposed Solution: Cloud-based mobile platform to manage learning materials and learning process anytime, anywhere***

Since all of the recorded contents will be stored in the central server directly via the mobile devices (i.e., cloud-based), students can review them anytime, anywhere and at their own pace. This helps to reduce the diversity of student's learning capability. And the server back-end system will also capture student's reviewing activities as well as other related information which helps teachers and parents to understand the children's learning progress, strength and weakness via data analysis.

***Proposed Solution: Extension of cloud-based collaborative and interactive mobile platform to non-conventional learning activities***

Moreover, CIMPLE will also support non-conventional learning activities. For example, the excursion activities for general studies and mathematics courses. Guidance can be prepared by the teachers (and/or students), and students may download the instructions by the mobile devices in the outdoor environment. Students may also share the hints to each other to complete the required tasks. Besides, by using the mobile device, students may draw a map (or tracked by GPS) to indicate their route to find the check points for others to reference or group reviewing afterwards.

**(b) Readiness of the applicant organization for undertaking the project**

The success of CIMPLE relies on the following THREE factors:

**(1) Multi-disciplinary project team with both technical and domain expertise**

The proposed project team is composed of researchers with complementary expertise on information technologies (e.g. eLearning system development, human behavior characterization for on-line systems, mobile application development, intelligent systems), and teachers from Christian Alliance H.C. Chan Primary School (CAHCC). Based on CAHCC's past experience in various eLearning projects, CAHCC is fit to collaborate as the pilot of this project. CAHCC has completed a number of QEF funded projects, such as "Build up a Wonderful Life through IT supported Music & Visual Arts Education (2008/0507)", "Campus TV Programme (2007/0554)" and "Information Technology Learning Centre (2001)". Moreover, the school has been the pilot of "Depository of Curriculum-based Learning and Teaching Resources – General Studies" (2009-2011). By joining the "<1 AP X 30 iPad> Tablet PC Pilot Learning Scheme", the school has also put effort on adopting mobile technologies in formal classes. Examples of related experience include using iPad to support drawing self-portrait and imitation of Van Gogh's at Arles in Visual Arts classes, and to facilitate excursion activity for General Studies course. Mobile technologies are also tried in the school's outreaching activities, e.g. using iPad to create movies with the stop motion technique and prepare scripts and images for campus TV broadcast. We believe that the user perspectives and human factors can effectively be considered in guiding the deployment of mobile IT. In addition, CIMPLE will be designed for and evaluated by school teachers and students, making it a higher chance to be an effective and yet easy-to-use system in the primary school settings.

Project Team:

Dr. [Name] CS Dept, HKBU

- Dr. [Name] will work closely with the Project Manager to oversee project schedule and deliverables, and play a major role in conducting the evaluation. She has participated in a QEF project and conducted behavior studies in technology-supported learning environment.

Dr. [Name] CS Dept, HKBU

- Dr. [Name] will provide technical recommendations for the project. He has managed a number of mobile app development projects with students as users. He has also been responsible for organizing a number of mobile apps workshop for teenagers, e.g. secondary school students and gifted students.

Dr. [Name] CS Dept, HKBU

- Dr. [Name] will provide recommendations on both project management and technical issues. He has been the Principle Investigator of a QEF project and has experience in managing various kinds of system development projects for the Department, Science Faculty, the University, and companies.

(2) Experience on mobile application development

HKBU computer science department has organized 6 mobile application development short courses for the teenagers for the last 2 years. Meanwhile, the department has developed a number of mobile applications for different units of the University, including Finance Office's Car Fleet Booking apps, HKBU Student Affairs Portal apps, Science Faculty's Computer Games on environmental protection, and etc.

(3) Maturity and acceptability of mobile devices

There are hundreds of mobile devices with rich features in the market. Also, Hong Kong is one of the highest mobile device usage cities in the world, according to SSI's research on mobile penetration [2]. It is strongly believed that teachers and students should not have any problem and hesitation on using mobile devices for teaching and learning. Technically speaking, the mobile devices in the market are pretty mature with a lot of multimedia features, and thus the deployment of our proposed collaborative and interactive learning platform should not be an issue. The cloud computing technologies can facilitate the storage and retrieval of learning materials anytime, anywhere.

**(c) Applicant organization's other favourable factors/facilities for implementing the project**

Our Department has strong commitment in e-learning related research and mobile application development. The following is a list of related projects we have involved in the past few years.

Project 1

Title: A Critiquing System for Enhancing Writing Competency Using Automatic Text Analysis

Project Num.: 2005/0279

Description: A Web-based essay critiquing system to provide automatic feedback to students' submitted essays based on the collected corpus so as to improve student's essay writing skill.

Period: Sept 2006 – May 2008

Project 2

Title: Workshop on Messaging and Global Positioning Service in Android Platform

Description: As one of the Academic Week activities of Computer Science Society (CSS) of Hong Kong Baptist University, the Department collaborates with CSS to offer a software workshop on messaging and positioning services using android platforms. The workshop is a Co-curricular Learning event recognized by the Office of Student Affairs, and it is open to all HKBU students free of charge. After the workshop, students could have a better understanding on basic techniques in using short messaging service (SMS) and positioning service in Android platform. Participants could try building and testing a simple app on their Android phone to deliver the current location details to another user via SMS.

Collaborator: Computer Science Society of Hong Kong Baptist University

Period: 1 Feb 2013

Project 3

Title: "Angry Birds for Curious Learners" for Gifted Students

Project Ref: The Hong Kong Academy for Gifted Education - Technology Course

(TEC0202A)

**Description:** A 2-day workshop was organized to 30 S.3-S.5 gifted students of the Hong Kong Academy for Gifted Education. The workshop aimed at helping the gifted students to acquire the knowledge of fundamental architecture and rationale of mobile platforms; understand the fundamental knowledge of Corona programming environment; and apply the techniques and skills learnt to create mobile applications themselves. Students could build three different simple mobile games after the workshop.

**Period:** 24 & 31 Mar 2012

#### Project 4

**Title:** Workshop on Android App Development

**Description:** The 3-day workshop is offered to the students of Department of Computer Science on Android application development. Topics include fundamentals of Android App development, user interface, navigation, communication between app and server, QR Codes scanning and location service. With the guidance from the instructor and helpers, participants could develop and deploy the sample apps on their own devices.

**Period:** 1. December 2011  
2. December 2012

#### Project 5

**Title:** Mobile App Workshop

**Description:** Several workshops were offered to different secondary school students. The workshops aimed at helping participants to gain exposure and hands-on experience on mobile apps development and computer game programming. After the 3-hour workshop, students could develop a simple mobile game which is similar to the core play mode of "Angry Birds".

**Period:** Summer workshops, 2011 and 2012

#### Project 6

**Title:** Car Fleet Booking System Mobile Interface of Hong Kong Baptist University

**Description:** The existing Car Fleet Booking System of Hong Kong Baptist University (HKBU) is enhanced to support the use of Android Smart phones by

drivers of HKBU Car Fleet. Drivers could use the new internal Android app to access up-to-date order information, receive reminder on upcoming orders and deliver personalized SMS to passengers.

Period: Jan - Mar 2013

### Project 7

Title: Student Affairs Portal Apps of Hong Kong Baptist University

Description: A mobile application was developed for HKBU Student Affairs Office, to provide quick access to campus resources, including event enrollment, student residence information and latest announcements from different administrative offices in HKBU. This app currently works on iPhone and Android devices.

Period: 2011 - 2012

## **Project Description**

### **(a) Goals and objectives**

The boost of mobile devices in the last few years provides the opportunity to improve the current eLearning collaborative and interactive deficiency as well as transform the way of learning from teacher centric (push mode) to student centric (pull mode). The goal of this project is to develop a cloud-based mobile platform and to deploy it to a primary school setting:

- To provide a highly usable way to produce and share interactive contents and to support collaborative learning in which the students are encouraged to participate actively.
- To allow students to understand how the ideas or answers are derived instead of getting the results only.
- To help students to build up creative, logical thinking and initiative characteristics.
- To reduce students' learning capability diversity.
- To support primary schools to conduct non-conventional learning activities more effectively.
- To help teachers and parents to understand students' learning progress, strengths and weaknesses.

**(b) Targets and expected number of beneficiaries**

Expected number of beneficiaries: It should be first all teachers and students in Christian Alliance H.C. Chan Primary School for this project as pilot. Related experience and lessons learned will be shared with other primary schools or even secondary schools after this pilot study.

**(c) Extent of teachers' and principals' involvement in the project**

Teachers' involvement will be:

- To help prepare teaching materials and/or content templates using the system
- To teach and assist students to prepare teaching materials and/or content templates using the system
- To help integrate the use of the system into their teaching plans.
- To help evaluate the students' performance before and after using the system.
- To participate in some interviews and help distribute questionnaires to students for project evaluation.

Principals' involvement will be:

- To encourage the use of the mobile platform in different subjects.

**(d) Implementation plan with time-line**

(i) Duration: January 2, 2014 to August 30, 2015

(ii) Process / Schedule:

- |                  |   |
|------------------|---|
| Jan 14 – Aug 14: | Requirement specification, system design, development and preliminary testing |
| Sep 14 – Dec 14: | Small scale pilot tests in CAHCC (Visual arts)                                |
| Jan 15 – Jun 15: | Training workshops and Pilot tests for more subjects in CAHCC                 |
| Jul 15 – Aug 15: | Seminar/Workshops for dissemination to other school teachers                  |



(iii) Collaboration with other parties / partners:

Christian Alliance H.C. Chan Primary School (CAHCC)

**(e) Expected deliverables and outcomes**

At the end of the project, it is expected to set up a mobile platform - CIMPLE with following functions for teaching and learning activities in CAHCC:

- Course materials templates
- Learning materials production and capturing, including video production
- Feedback and comment
- Picture, voice and video capturing
- QR code, GPS
- Cloud-based file sharing
- Learning process tracking

The teaching plan templates of CIMPLE are listed in Appendix I. And CIMPLE is supposed to be easily deployed and used in other schools.

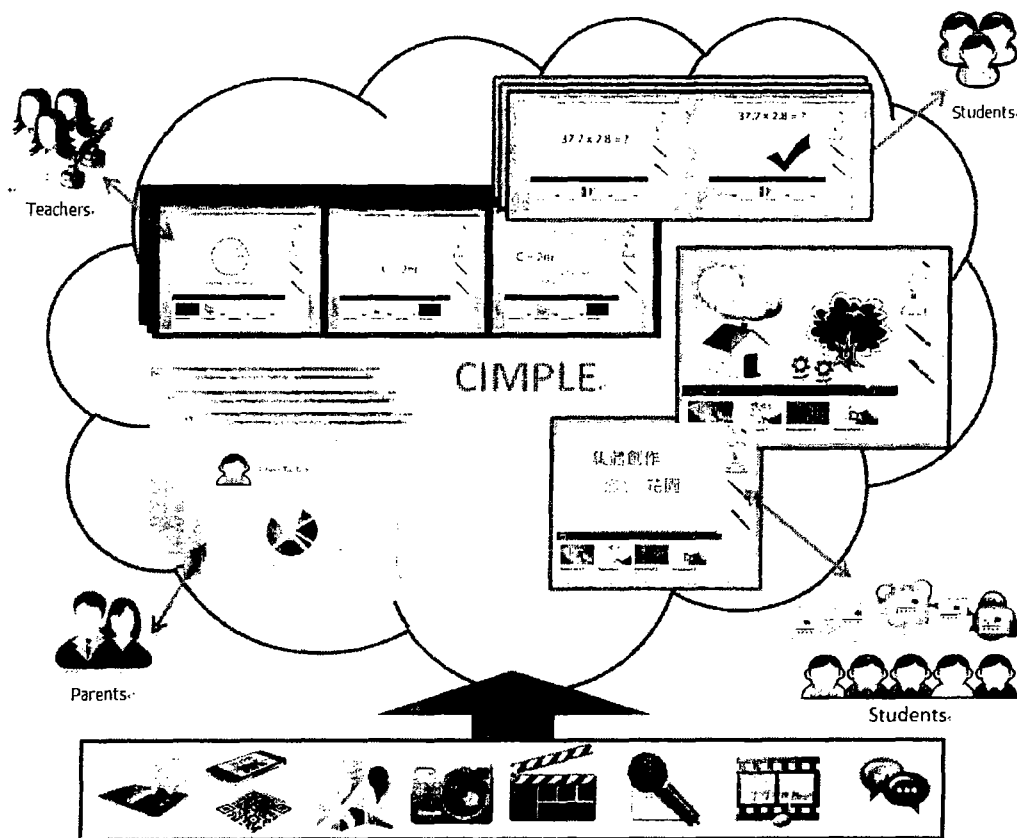


Figure 1: CIMPLE Operation Overview

**(f) Budget with detailed breakdown, Access Usage Plan and Payment Schedule**

Budget: HK\$ 694,200

| Items   | Amount (HK\$)  |
|---|----------------|
| (i) Staff Cost:   |                |
| 1. 1 Project Manager (\$22000 X 9 Months X 1.05 MPF)  | 207,900        |
| 2. 1 Analyst Programmer (\$17000 X 18 Months X 1.05 MPF)  | 321,300        |
| (ii) Equipment  |                |
| 1. 20 Tablet PC (\$4000*20)   | 80,000         |
| 2. 1 server for storing teaching materials  | 20,000         |
| 3. 10 Network Equipment (\$1000*10) (e.g. Wifi Access Point)  | 10,000         |
| (iii) General expense (part-time helpers + markers + seminar/workshops + audit fee)   |                |
| 1. Audit Fee  | 5,000          |
| 2. Part-time helpers and markers fee for providing support on testing, user training and score keeping (\$40 X 375Hrs X1.05MPF) | 15,750         |
| 3. Part-time helpers fee for providing support on Pilot run of the system (\$40 X 300Hrs X1.05MPF)                              | 12,600         |
| 4. Part-time helpers fee for providing support on workshops and seminars (\$40 X 120Hrs X 1.05MPF)                              | 5,040          |
| 5. Promotional items (banners, posters, pamphlets, invitation cards, attendance certificates)                                   | 9,000          |
| 6. Stationery, blank compact disks, projector AV cables, USB cables, and printing cost  | 3,800          |
| 7. Reference books and materials, transport fees, and external battery pack for mobile devices                                  | 3,810          |
| <b>Total:</b>   | <b>694,200</b> |

**Asset Usage Plan:**

| Category  | Item/Description  | No. of Units | Total Cost | Proposed Plan for Deployment |
|-----------|-------------------|--------------|------------|------------------------------|
| Equipment | Tablet PC         | 20           | 80,000     | For use by CAHCC             |
| Equipment | Storage Server    | 1            | 20,000     | For use by CAHCC             |
| Equipment | Wifi Access Point | 10           | 10,000     | For use by CAHCC             |

## **Project Impact**

### **(a) Evaluation Parameters and Methods**

This project will be evaluated from two aspects: (1) the usability of the mobile platform, and (2) the performance of the students after using the system.

#### *System usability*

Usability refers to the measure of how easy the user interfaces are to learn and to use. In order to ensure the mobile teaching and learning platform's usability, a prototype of user interface will first be developed before CIMPLE is fully implemented. Users (both teachers and students) will be invited to try and comment the interface design. Observations (e.g., problems encountered while using the system) recorded by the project team and comments on ease of use and ease of learning made by the users will then be studied so as to finalize the user interface design. In the final stage of the project, another round of questionnaires and interviews will be conducted to collect their final opinions.

#### *Student performance*

Student collaborative and interactive performance in learning is definitely an important indicator to measure the effectiveness of CIMPLE, which however is not easy to measure. We plan to use academic result assessment and other skills assessments such as problem solving skill, presentation skill, and teamwork evaluations after the adoption of the system in the daily courses, as the basis of evaluation. For the detail, please refer to Appendix II – Evaluation Plans.

### **(b) Sustainability of the Outcomes of the Project**

After the completion of the project, the source code accompanied with both technical and end-user documentation can be released as open source software on SourceForge.net, Education City and other Web sites. SourceForge.net (<http://sourceforge.net/docs/about>) is the world's largest repository of open source software. It hosts more than 100,000 projects and has over 1,000,000 registered users. In principle, our system can be distributed to all schools in the world. And the light-weight version (not required server side support) of CIMPLE can also be downloaded from the Google Play for free trial.

**(c) Dissemination / Publicity Methods**

Upon the completion of the system, principals and teachers from other primary schools will be invited to attend a dissemination seminar in which the benefits and major features of this system will be introduced. We will invite both teachers and students from the pilot school to share their experience in adopting the system in their school environment.

Following the dissemination seminar, we plan to conduct two workshops for schools that intend to use the system. One will be technically oriented, aiming at showing the school computer technicians how to install and maintain the system themselves. The other one will be end-user oriented with the purpose of providing the participating teachers some hands-on experience in using the system.

## Report Submission Schedule

The CIMPLE development team commits to submit proper reports in strict accordance with the following schedule:

| Project Management                          |                | Financial Management                                    |                |
|---|----------------|---|----------------|
| Type of Report and covering period          | Report due day | Type of Report and covering period                      | Report due day |
| Progress Report<br>1/1/2014 -<br>30/6/2014  | 31/7/2014      | Interim Financial<br>Report<br>1/1/2014 - 30/6/2014     | 31/7/2014      |
| Progress Report<br>1/7/2014 -<br>31/12/2014 | 31/1/2015      | Interim Financial<br>Report<br>1/7/2014 -<br>31/12/2014 | 31/1/2015      |
| Progress Report<br>1/1/2015 -<br>30/6/2015  | 31/7/2015      | Interim Financial<br>Report<br>1/1/2015 - 30/6/2015     | 31/7/2015      |
| Final Report<br>1/1/2014 -<br>31/8/2015     | 30/11/2015     | Final Financial Report<br>1/7/2015 - 31/8/2015          | 30/11/2015     |

## Appendix I: Teaching Plan Templates of CIMPLE

### 1. Collaborative Group Painting: Mood (Visual Arts)

**Review two artists' works:** Wassily Kandinsky & Piet Mondrian

#### **Purpose of teaching:**

- To learn the painting styles of Wassily Kandinsky's "Composition VIII" and Piet Mondrian's "Composition with Red, Blue and Yellow" (Knowledge)
- To learn painting techniques on using three primary colors (Red, Green & Blue), contrasting colors (complementary colors), and geometric patterning (Techniques)
- To learn computerized drawing tools (Techniques)
- To understand and experience the fun of collaborative painting (Feelings)

**Duration:** 4~6 lessons

#### **Teaching process:**

1. Teacher will introduce the concept of geometry and show Wassily Kandinsky's "Composition VIII" and Piet Mondrian's "Composition with Red, Blue and Yellow" thru CIMPLE
2. Students write down their observations about these artworks in CIMPLE. For example, what are in common among the two artworks? (Lines, geometric composition, etc.)
3. Teacher draws the conclusion and explains the two artworks thru CIMPLE
4. Teacher teaches students how to use CIMPLE drawing tools
5. Students use CIMPLE to do the visual arts assignment by applying the above artworks features/techniques
6. Using the two artworks in Step 1 and color matrix to discuss the three primary colors and contrasting colors (complementary colors) with students
7. Students apply the three primary colors and contrasting colors (complementary colors) to previous assignment in Step 5
8. Conduct review and group discussion on students' assignments thru CIMPLE
9. Students use the geometric, three primary colors and contrasting colors techniques to draw a picture in CIMPLE with "Mood" as subject. Meanwhile, students' drawings will be merged together into one picture
10. Students work on their own paintings, but they can see the drawings of the others thru CIMPLE and the possible outcome of the final merged picture

11. Combine students' drawings in different arrangements randomly
12. Students vote for their favorite merged pictures
13. Review and discussion

## 2. Stop Motion: Let Your Quirky Car "Moving" (Visual Arts)

**Review two stop-motion movies:** "The Cameraman's Revenge" by Ladislav Starevich's and "Katachi" MV for Japanese Singer - Shugo Tokumaru by Katarzyna Kijek and Przemysław Adamski's

### **Purpose of teaching:**

- To understand what stop-motion is and how to create a stop-motion movie (Knowledge and Techniques)
- To understand how to use rhythm to create momentum (Knowledge)
- To achieve group creation, learn division of labor and teamwork. (Feelings)

**Duration:** 6~8 lessons

### **Teaching process:**

1. Teacher shows the Lego version of "The Hobbit: The Desolation Of Smaug" movie trailer, "Cameraman's Revenge" and "Katachi" thru CIMPLe
2. Conduct group discussion and analyze the motion rhythm of those movies
3. Teacher introduces the stop-motion movie concept.
4. Students discuss in groups on how to produce stop-motion movies and the required equipment and techniques
5. Teacher introduces the required equipment and the way to produce stop-motion movies.
6. Using the "Quirky Car" of previous assignment, students draft the storyboard for their stop-motion movies by groups
7. Students prepare the backdrop and other required elements in the movie
8. Students use CIMPLe to produce stop-motion movies.
9. Students review, discuss and vote for their favorite group works
10. Teacher summarizes the class



### 3. Arts Trail (Visual Arts)

#### Purpose of teaching:

- To enhance students' awareness on famous painting artists and their artworks.
- To cultivate students' interest in visual arts.
- To cultivate students' problem solving skill and teamwork spirit

**Duration:** 2 sessions (70 Minutes)

#### Preparation:

1. Prepare 10 questions and answers related to famous painting artists and their artworks, and then generate the corresponding QR Codes in CIMPLE
2. Set 10 QR Code locations inside the campus

#### Rules of the Trail game:

1. For each class of P4 and P5, students will further be divided into 5~7 group (4~5 students per group). Each group cooperates to answer 10 questions as far as they can within 40 minutes
2. Equipment: Each group will be assigned 1 tablet
3. Reward: Prizes will be presented to the best three groups of each class

#### Event Rundown:

| Time    | Rundown                          | Remarks  |
|---------|----------------------------------|--|
| 5 Mins  | Congregation and Team grouping   | Congregation of P4 and P5 students and team forming  |
| 10 Mins | Briefing                         | Teacher provides briefing on the rule of the trail game and distributes a tablet to each group   |
| 40 Mins | Competition                      | Each group starts the competition at the firstly assigned QR code location, and they need to use CIMPLE to get the question by scanning the QR code, solving the question and then submit the answer thru CIMPLE. After submitting the answer, students will get the hints for the next QR Code location. Each group is required to solve the ten questions as far as they can within 40 mins. |
| 15 Mins | Explanation / Prize presentation | Teacher explains the answers of each question and prizes will be given to the best three groups of each class  |

**4. Cross-curricular activities: School Yearbook**

**Aims:** Students use multimedia techniques, to express their gratefulness to the school, teachers and schoolmates, as well as express their joyful of graduation.

**Participating curricular:** Chinese, English, Visual Arts and Computer Studies

**Event Rundown:**

1. Chinese and English teachers will guide students to prepare their grateful speech of graduation
2. Computer studies teachers will guide students to capture video and/or picture of various events in which expressing their gratefulness to the school, teachers and schoolmates
3. Visual Arts teachers will guide students to create personalized icon in the electronic school yearbook
4. Students upload their works to CIRCLE for producing an interactive electronic school yearbook
5. Teachers, students and parents read the school yearbook thru CIRCLE and share the joyful of graduation.

## Appendix II: Evaluation Plans

Survey and Interview will be conducted at the end of the project to evaluate students' performance after using CIMPLE.

- I. Survey will be conducted through questionnaires to gather perceptions from teachers, students and parents on using CIMPLE.

Sample questions of the survey are listed below:

1. For Teachers and Parents

- a. After using CIMPLE, students' abilities shown below are: (3 options for each question, 1) Get worse, 2) Almost the Same, 3) Improved)

- (i) Problem solving skill
- (ii) Teamwork
- (iii) Team spirit
- (iv) Presentation skill
- (v) Leadership skill
- (vi) Self-learning
- (vii) Creativity
- (viii) Logical Thinking
- (ix) Communication skill
- (x) Self-confident

- b. What is your opinion on using CIMPLE?

2. For Students

- a. Do you think it is funny to use CIMPLE during the lesson?
- b. Among the lessons that supported by CIMPLE, which lesson impresses you mostly?
- c. Do you want to use CIMPLE in more lessons?
- d. What other subject(s) would you like to be taught using CIMPLE?
- e. Please list out 3 functions of CIMPLE that you think useful/interesting.
- f. Please list out 3 functions of CIMPLE that should be improved.
- g. Please list out 3 functions that you wish CIMPLE will have.
- h. Would you think it is much easier to pick up the subject knowledge by using CIMPLE?

- II. Qualitative comments on CIMPLE will be collected through interviews. Teachers of different subjects and students of different levels will be invited for interviews to express their feelings and comments about CIMPLE. Besides, they will be asked to suggest improvements/new functions that they expect in the future version of CIMPLE.

**Reference:**

1. Lee, C.H, Lee, G.G., and Leu Y. (2008). "Analysis on the Adaptive Scaffolding Learning Path and the Learning Performance of e-Learning" *Information Science & Applications*, vol. 5, issue 4, pp.320-330.
2. SSI, *Research on Mobile Penetration*. Retrieved from <http://www.surveysampling.com/sv-SE/get-informed/newsroom/press-releases/Cell-Phone-Study.aspx>

