Consolidation and Redevelopment Work on Information Technology (IT) in Education, Quality Education Fund (QEF) Final Report

Covering the report period from 01/01/2016 to 31/03/2017

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1. Project Introduction

1.1 Project Objectives

The scope includes QEF projects related to IT in Education, and non-QEF related projects, namely the Centre of Excellence Scheme (CoE) Scheme and the e-Learning Pilot Scheme.

The objectives of the Consultancy Service are as follows:

- To study selected projects funded by QEF and non-QEF related to “IT in Education”, in respect of the theme on self-directed learning, with emphasis on their creativity, collaboration, problem-solving and computational thinking skills as well as ethical use of IT in an enhanced IT environment;

- To select worthwhile project outcomes, deliverables, exemplars for further research and development with reference to well-established criteria and research framework and methodology;

- To interview project leaders concerned whenever necessary;

- To conduct research and development work on the selected project deliverables with a view to producing a resource package for teachers with guiding principles, good practices, exemplars, teaching resources and user guide, etc.;

- To produce a printed version of the resource package with soft copies in (i) Word format and (ii) pdf format produced from Adobe Illustrator Artwork (AI) electronic version that are of a marketable/saleable quality ready for printing/production by the QEF;

- To make recommendations to the PSEdi on setting up a QEF Thematic Network (QTN) on the theme of “IT in Education”;

- To conduct at least one territory-wide seminar to disseminate the good practices and exemplars consolidated and developed from the QEF and non-QEF projects concerned.
1.2 Project Approach

A two-phase research framework has been proposed in 2015 to study and evaluate the selected projects funded by QEF and non-QEF related to “IT in Education”. Figure 1 depicts the approach. The research framework is aimed to assist the consultancy team in reviewing the different aspects of good practices and then set the priority for further investigation rather than assessing the studied projects. In Phase I, the quality of the available outcomes/deliverables produced from the projects have been examined (e.g. websites, CDs. Booklets, teaching packages). In Phase II, the learning experience of using the products is collected and studied. During March 2016, 6 cases (QEF and non-QEF projects) have been sampled and reviewed to verify the initial Phase I design. After the review, changes have been made for the criteria in Phase I for better extraction of good Information and Communications Technology (ICT) practices in teaching and learning.

The rational of the design of the approach is two folded. First, we would like to provide quality evaluation frameworks in which indicators of good quality e-Learning projects can be consolidated and reused for evaluation and selection work of similar projects or learning materials in future. Second, the two-phase approach integrates the artifact itself and the learning experiences which can give a holistic understanding of the quality of the project based on which a more sophisticated sharing and dissemination can be conducted for project scalability and sustainability.

![Figure 1: Two-phase Approach](image)

As stated in the Report on the Forth Strategy on Information Technology in Education (Education Bureau, 2015), it is a key responsibility for the education sector to strengthen students’ problem-solving, collaboration and computational thinking competency, enhance their creativity and innovation, and even entrepreneurship, as well as to nurture the students to become ethical users of IT for pursuing life-long learning and whole-person development through leveraging technology and the
capacity of IT. As a result of Web 2.0, e-Learning is now more focused on collaboration, interaction, and participation. McLoughlin and Lee (2008) stress that the challenges of e-Learning in a networked society mainly concern the meaning of the three Ps: personalization, participation, and productivity. These authors have stated that these dimensions are crucial for successful e-Learning, that is, the individual’s prerequisite motives and motivation (personalization), the individual’s participation in the learning process (participation), and the individual as a co-producer in the e-Learning process (productivity).

Other literatures also show that various aspects of accessibility, flexibility, interactivity, personalization, and productivity should be embedded in all levels of management and services. As a result, quality of e-Learning is made up of many elements. For example, the following is suggested as quality criteria (Garvin, 1988):

- **Performance** – the finished product should operate in an effective way, as determined by the end-user.
- **Features** – the ‘bells and whistles’ incorporated into the finished product should be appropriate, and not detract from the overall objectives of the project
- **Reliability** – the finished product should not be subject to malfunction.
- **Conformance** – the finished product should comply with industry standards, using standard technologies (though those technologies can be pushed to their utmost) and reflect established education theory.
- **Durability** – the finished product should be relevant and either timeless (in the case of teaching established principles) or easily updated.
- **Serviceability** – it should be easy to repair or adjust the finished product as required.
- **Aesthetics** – the overall ‘feel’ of the finished product should be professional and user-friendly.

Through an analysis of relevant educational literature, we have developed a two-phase evaluation approach as well as evaluation frameworks which includes several quality aspects. The evaluation approach and frameworks are designed with the consideration of the purpose of consultancy services which is to consolidate and redevelop the
selected projects in respect of the theme on self-directed learning, with emphasis on their creativity, collaboration, problem solving and computational thinking skills as well as ethical use of it in an enhanced ICT environment.

Quality in e-Learning projects can be assessed both in terms of product quality and in terms of the quality of the learning experience. Though these do overlap in some respects, it is also the case that current quality metrics such as ISO/IEC 9126 do not address what might be regarded as the ‘softer’ aspects of quality. Research indicates that the quality of a learning experience is not solely based on the quality of the software but also on the conceptual basis upon which the learning experience is constructed. With this idea, we would like to explore the quality related aspects of frameworks for e-Learning and propose some metrics that might be adopted to assess the quality of an e-Learning project.

We begin by introducing Phase I: Quality of Product in details which considers the importance of technical quality issues and the key quality indicators. We then move on to consider Phase II which goes beyond the technical part to evaluate the learner’s experience. With these ‘softer’ quality issues in mind, we collect the evidences of learning experiences based on which further qualitative study can be conducted. In this way, e-Learning projects can be assessed from a holistic perspective. The proposed approach and framework can be used in both a developmental sense to inform design for future learning projects, as well as to pinpoint worthwhile outcomes, deliverables, exemplars for sharing and dissemination.

**Phase I: Quality of product**

In this phase, each project is examined based on the quality of the outcomes and deliverables. We refine the framework to include three criteria from the original five criteria in 2015 (Figure 2). Each project is evaluated and examined according to the three criteria. Good practices are collected according to the indicators in the criteria. For each indicator, each project are graded with a rank and a total mark is calculated by summing up all the rank marks of all the indicators under each criterion.
Phase II: Learning experience

The evaluation conducted in Phase I mainly considers the artifact itself, however perceptions of quality of an e-Learning project should go beyond the merely materials themselves to encompass the learner’s own interactions and experiences with the learning materials. These perceptions are of course vary between different types of students, but there are certain emerging patterns and requirements that can be applied as generic best practice.

Based on the literature review, we have used a multi-dimensional model to evaluate learning quality and success of the use of e-Learning. There are 5 criteria which are considered to be important factors affecting effective e-Learning. These five dimensions include both ‘social’ and ‘technical’ issues. Each criterion includes several indicators. Figure 3 depicts the model.
In the quantitative study, survey instruments based on the five-dimensional model have been developed to examine students’ perceived satisfaction of the use of e-Learning, teacher’s perceived satisfaction of the use of e-Learning, and the factors affecting students’ and teachers’ satisfaction levels. A set of evaluation survey have been developed for different users of the e-Learning, i.e. students and teachers. General Teachers Survey on e-Learning has been designed to measure teachers’ view towards e-Learning. As for the students, General Students Survey on e-Learning and the Students’ Satisfaction Survey have been developed to measure students’ views.
towards e-Learning and their satisfaction and perceived usefulness of the e-Learning system they used respectively. The survey questions are shown in Appendix G. Next step is data analysis. In this step, we have conducted analysis on the data collected from survey. We have used statistical methods to validate the proposed model and conclude the findings to understand students’ and teachers’ views on the use of e-Learning. Success factors that have significant impact on the success and quality of e-Learning have been identified based on the statistical analysis.

Then it is the focus group interviews. To better understand the project impact, success factors, good practices and sustainability of the existing projects, focus group interviews have been conducted. The following stakeholders of the selected projects have been interviewed: teachers who were involved in the development and teaching of the project outcomes/deliverables to conduct teaching, students who were taught by the teachers mentioned above, and other project development team members who might not be involved in the teaching, e.g. principal investigator, technical support services (TSS) staff, project staff, other teachers, principals initiating the project.
1.3 Project Team Information

<table>
<thead>
<tr>
<th>A. Project title:</th>
<th>Consolidation and Redevelopment Work on Information Technology (IT) in Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Consultant:</td>
<td>Department of Computing, The Hong Kong Polytechnic University</td>
</tr>
<tr>
<td>C. Consulting Team:</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Role</td>
</tr>
<tr>
<td>Dr. Vincent Ng</td>
<td>Team Leader</td>
</tr>
<tr>
<td>Prof. Cao Jiannong</td>
<td>Research Supervisor</td>
</tr>
<tr>
<td>Mr. Ian Brown</td>
<td>Education Consultant</td>
</tr>
<tr>
<td>Dr. Laura Zhou</td>
<td>Researcher (Education)</td>
</tr>
<tr>
<td>Dr. Dennis Liu</td>
<td>Researcher (IT)</td>
</tr>
<tr>
<td>Miss Sharon Keung</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>D. Date of commencement:</td>
<td>01/01/2016</td>
</tr>
<tr>
<td>E. Date of completion:</td>
<td>31/03/2017</td>
</tr>
</tbody>
</table>
List of Teacher Advisors for the consultancy service project:

<table>
<thead>
<tr>
<th>Name of School</th>
<th>Name of Teacher Advisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC Ming Yin College</td>
<td>Mr. Luk Hoi Wah</td>
</tr>
<tr>
<td>Newman Catholic College</td>
<td>Mr. Kan Yiu Bong</td>
</tr>
<tr>
<td>L.S.T. Lau Tak Primary School</td>
<td>Ms. Fung Sau Tak</td>
</tr>
<tr>
<td>Baptist (Sha Tin Wai) Lui Ming Choi Primary School</td>
<td>Ms. Man Ngan Ching, Deon</td>
</tr>
<tr>
<td></td>
<td>Mr. Chiu Ka Chun, Tony</td>
</tr>
<tr>
<td></td>
<td>Mr. Tseng Jui Te, Patrick</td>
</tr>
</tbody>
</table>
2. Project Results

The project team reviewed 38 QEF projects, 21 e-Learning Pilot Scheme projects, and 20 project schools in the CoE Scheme for the year of 2015/16, which make a total of 79 projects. The major tasks schedule is shown in Table 1.

2.1 Major Tasks Schedule

<table>
<thead>
<tr>
<th>Major Tasks</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature and project review</td>
<td>Jan – Mar 2016</td>
</tr>
<tr>
<td>Assess QEF and non-QEF projects (Phase 1 &amp; 2)</td>
<td>Apr – Jun 2016</td>
</tr>
<tr>
<td>Plan, design and develop the web-based resources system</td>
<td>Apr – Nov 2016</td>
</tr>
<tr>
<td>Submit initial draft of the resource package for endorsement</td>
<td>Jul 2016</td>
</tr>
<tr>
<td>Submit interim report</td>
<td>Oct 2016</td>
</tr>
<tr>
<td>Submit final draft of the resource package</td>
<td>Dec 2016</td>
</tr>
<tr>
<td>Submit final report</td>
<td>Jan 2017</td>
</tr>
<tr>
<td>Conduct dissemination seminar</td>
<td>Feb 2017</td>
</tr>
</tbody>
</table>

Table 1: Major tasks schedule

2.2 Phase 1 Study and Findings

In Phase 1, each project was examined based on the quality of the outcomes and deliverables. The project team reviewed the QEF projects and the e-Learning Pilot Scheme projects based on three criteria proposed in the research framework: Content, Pedagogy and Learning, and Scalability. The project team reviewed all the available project documents, including project proposals, final reports, appendixes, and available project deliverables, such as CDs, DVDs, websites, and mobile apps, etc. As a result of the project review in Phase 1, the project team first selected four QEF projects and invited the project schools to join the Phase 2 study. Unfortunately, the invitations were not too successful. Then the project team has identified four more
projects and invited the respective schools. Three out of the four project schools agreed to participate in our Phase 2 study. Details of the three invited schools for our Phase 2 study will be discussed in Section 2.3.2. The project team has also collected more good practices according to the indicators of the three criteria from the documents review. These good practices are concrete examples of a good quality e-Learning product. The QEF project review report and all the good practices extracted are shown in Appendix A.

1. **Content**

The content criterion considers the quality of the contents provided in the project deliverables (e.g. website, CD, game, learning object). These indicators (Functionality, Usability, Attractiveness, and Organization) assess how well the contents have been effectively delivered by e-Learning environments regarding to different aspects.

- **Functionality**

It is a good practice that the e-Learning product/system has a complete set of feature needed for a specific learning environment. Two examples in the aspect of functionality are extracted from the projects documents review (Table 2).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C.5</td>
<td>The system is able to provide tools for students to study various aspects of Chinese characters</td>
</tr>
<tr>
<td>C.23</td>
<td>The online platform provides suitable input methods for mathematical signs, formulas, graphs and innovation voice input</td>
</tr>
</tbody>
</table>

Table 2: Two examples in the aspect of functionality

- **Usability**

It is a good practice that the e-Learning product/system to be user friendly, error-free and gives instantaneous response when interacting with users. Table 3 shows two examples.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C.11</td>
<td>Good to use panoramic photos to show the real situation along the trails and provide hotspot on different plants</td>
</tr>
<tr>
<td>C.16</td>
<td>Simple web interface for easy traversal</td>
</tr>
</tbody>
</table>

Table 3: Two examples in the aspect of usability
**Attractiveness**

It is a good practice that the e-Learning product/system to be attractive with professional looking, pleasing and clear user interface for learners to continue the use of it for further learning. Moreover, one good use of multimedia in the product is the integration of different media for effective and attractive presentations. Two examples from our project review are extracted (Table 4).

<table>
<thead>
<tr>
<th>C.9</th>
<th>Engaging videos, colorful animations, and interactive quiz games related to Chinese history and culture are very attractive</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.31</td>
<td>Comprehensive materials in over 20 areas are available. The online platform has a number of exercises for students to do, and they are in various forms: animation, data and references, comics, videos and interactive games.</td>
</tr>
</tbody>
</table>

Table 4: Two examples in the aspect of attractiveness

**Organization**

Organization refers to the correct and logical organization and structure of contents. It is a good practice that the learning materials in the e-Learning product/system organized in a professional way, with materials presented in clear and/or logical order, and appropriate to the tasks. Such clear organization provides hints of reading flow and increases readability. Moreover, proper formatting of margins, spacing, indentation, etc. are good practices as well. One example from our project review is shown in Table 5.

| C.18  | The teaching courseware is well structured and organized, including an introduction, objectives, procedures, assessment and evaluation. For some of the teaching courseware, there is a teachers’ discussion page. |

Table 5: One example in the aspect of organization

**2. Pedagogy and Learning**

A good e-Learning project should align with good pedagogy to enable deep learning rather than simply assemble what can be done in traditional classrooms. There are seven indicators (Objectives and target groups, Pedagogical design models, Communication and media, Cognitive skill level, Collaboration, Personalization, Motivation and engagement) assessing how well an e-Learning product/system can be
effectively delivered.

- **Objectives and target groups**

It is a good practice for the e-Learning project to clearly identify the target groups and prerequisites for this group of learners to effectively learn the materials. All learning materials need to be addressing the special characteristics of the identified target group. Moreover, it is also a good practice that a project product to clearly identify the objectives of the product/system and/or learning outcomes of students after participating the project. The teaching plan and/or learning process with clear identified objectives and target groups can efficiently and effectively facilitate, guide and/or help students to achieve the learning outcomes. Two examples from our project review are shown in Table 6.

<table>
<thead>
<tr>
<th>P.4</th>
<th>Multi-level learning is suggested for supporting student diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.47</td>
<td>The project has very clear objectives and target group</td>
</tr>
</tbody>
</table>

Table 6: Two examples in the aspect of objectives and target groups

- **Pedagogical design models**

It is a good practice that the project product applies sound pedagogical models to design the project. Three examples from our project review are shown in Table 7.

<table>
<thead>
<tr>
<th>P.1</th>
<th>The approach of learning-on-demand is used to support different learning pace and diversity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.15</td>
<td>Scenario-based learning was adopted for better learning effectiveness, guiding students to overcome abstract concepts.</td>
</tr>
<tr>
<td>P.49</td>
<td>Use real-life examples and materials to engage students.</td>
</tr>
</tbody>
</table>

Table 7: Three examples in the aspect of pedagogical design models

- **Communication and media**

It is a good practice that the project product has a clear and user-friendly tone and language. With learning materials delivered in an interactive way, the e-Learning product/system provides sufficient opportunities and builds up good platforms for learners to interact with each other. It also enables mutual feedback between education providers and learners. Two examples are extracted from our project review as shown in Table 8.
Students discussed their assignment with a non-local school (New Jersey, USA) through a video conference and then worked on assignment reports.

Teamwork was encouraged and interpersonal skills are improved for students to use different media available in the system to share and publish newsletters in a team. Moreover, with discussion and group work, students were able to express ideas and content through using different types of media.

Table 8: Two examples of good communication and media of an e-Learning product/system

- **Cognitive skill level**
  It is a good practice that the e-Learning product/system helps to facilitate students to achieve different levels of cognitive skills, such as Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating. (Armstrong, P., captured on February 10, 2017) Specifically, it is a good practice for the e-Learning product/system to help students to achieve the development of cognitive skills up to the category of creating and/or evaluation. Two examples from our project review are shown in Table 9.

- **Collaboration**
  It is a good practice that the project product creates a good collaborative learning environment and sufficient peer learning opportunities; the learning activities involved are designed to motivate and engage students to share with and learn from each other. Such collaborative environment helps students to develop communication skills in the learning process. Three examples from our project review are shown in Table 10.
writing. Moreover, students need to use the platform to write and comment on each other’s work. An IT tool is used for the benefit of instant collaboration in language classroom.

The school used an online platform to strengthen the connection with parents and provided easy access to parents to understand what their children do and learn in the lessons.

Table 10: Three examples of a good collaborative learning environment/sufficient peer learning opportunities

- **Personalization**
  It is a good practice that a project product takes account of students’ learning status, styles, level of IT competence, knowledge level and/or other characteristics. Moreover, the learning paths, activities, assessments, feedbacks and/or other learning experience given to a particular student are tailor-made and personalized to fit for that student accordingly. Two examples from our project review are shown in Table 11.

<table>
<thead>
<tr>
<th>P.11</th>
<th>Interactive revision exercises were created for student self-learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.68</td>
<td>With more learning materials provided in the system, smarter students can self-learn and trace their own pace and learn from trial and errors.</td>
</tr>
</tbody>
</table>

Table 11: Two examples in the aspect of personalization

- **Motivation and engagement**
  It is a good practice that all the learning resources and activities are attractive and interesting. These learning resources and/or learning activities often can motivate students to learn and lead to better study engagement afterwards. Table 12 shows four examples from our project review.

<table>
<thead>
<tr>
<th>P.10</th>
<th>Games were used to promote students’ interest in learning Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.33</td>
<td>To promote life-long learning by supporting students to create their own new knowledge units</td>
</tr>
<tr>
<td>P.36</td>
<td>The goal-oriented activities/competitions organized in this project helped to motivate and engage learners to participate</td>
</tr>
<tr>
<td>P.54</td>
<td>Rich, multi-sensory or multimedia instructional material is a lasting and impactful way of conducting a lesson and engaging the students</td>
</tr>
</tbody>
</table>

Table 12: Four examples in the aspect of motivation and engagement
3. **Scalability**

With the purpose of dissemination of the good outcomes, deliverables from the selected projects, we have identified those which are scalable for different contexts and can benefit more students and teachers. Examples from our project review are given according to the indicators (Student, Discipline, and Extensibility).

- **Student**

   It is a good practice that the project product itself or the design concept and/or the learning process/format can be easily used by students in other schools with different class sizes. Moreover, it would be even better if they can be adaptable to cater for students with different learning styles and special needs. Table 13 highlights two examples from our project review.

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>S.12</td>
<td>All students can make use of the online platform and access question banks and self-learning. The auto-marking function of the platform is a good practice as students can immediately know the result and keep track of their learning process.</td>
</tr>
<tr>
<td>S.27</td>
<td>Previous student works are kept and stored in the online platform and can be shared with other students. This is an important and useful way to build a learning community.</td>
</tr>
</tbody>
</table>

Table 13: Two examples of the e-Learning product catering students with different learning styles and needs

- **Discipline**

   It is a good practice that the project product itself or the design concept and/or the learning process/format can be easily redesigned and/or example good practices for learning conducted in other disciplines. An example of this from our project review is shown in Table 14.

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>S.23</td>
<td>The project included a school-university partnership which provides centralized support, and this helps to promote and support curriculum and pedagogical innovation. As individual school lacks the resources and ability to build up the expertise and capacity by itself, experts in local universities are in a better position to take the lead and organize large-scale teacher support and training.</td>
</tr>
</tbody>
</table>

Table 14: An example of a school-university partnership
• Extensibility

It is a good practice that the project product can be easily updated and/or upgraded to the state of the art. Moreover, it is also a good practice that the e-Learning product/system to be able to stay updated and usable for future users with manageable efforts. Table 15 shows an example from our project review.

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>S.19</td>
<td>The system is based on open source and can be extended and further developed by third parties after the completion of the project. The instructional materials can also be modified and extended by teachers.</td>
</tr>
</tbody>
</table>

Table 15: An example of an extensible e-Learning product/system

2.3 Phase 2 Study and Findings

In Phase 2, the project team reviewed the Centre of Excellence (CoE) Scheme, and extracted some good practices and a list of e-Learning tools recommended by the CoE teachers. Also, as the Phase I results focused on the project product only, to go beyond and find out more success factors of an e-Learning project, Phase II focused more on the learning experiences. The project team conducted a quantitative and qualitative study on learning experience of using IT in Education.

2.3.1 Centre of Excellence Scheme Review and Findings

The Scheme is organized by IT in Education Section, EDB. Each year, EDB invites experienced teachers in using IT for learning and teaching to participate in the Scheme through the Annual Teacher Secondment Exercise. One of the main duties of the secondees is to provide on-site support services and professional development programmes to other schools on e-Learning. The themes of the services cover pedagogical, technological as well as managerial issues related to the implementation of IT in Education. The project team reviewed the documents of the 2015/16 CoE Scheme. There are 22 sets of documents of 12 CoE schools collected from the Education Bureau Information Technology in Education Section. The project team reviewed these sets of documents, including the application forms, workshop rundown, sharing session PowerPoints, and feedback forms from the CoE teachers, etc. Moreover, the project team attended and reviewed the CoE pre-meetings and supporting workshops. A summary of the CoE Scheme reviewed and a list of CoE supporting workshops attended is shown in Table 16 and Table 17 respectively.
Table 16: A summary of the CoE Scheme reviewed

<table>
<thead>
<tr>
<th>CoE Scheme review</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoE project documents reviewed</td>
<td>22 (sets)</td>
</tr>
<tr>
<td>CoE pre-meetings attended</td>
<td>2</td>
</tr>
<tr>
<td>CoE workshops attended</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 17: List of CoE supporting workshops attended by the project team

<table>
<thead>
<tr>
<th>Preparation meeting attended</th>
<th>Supporting workshops attended</th>
<th>School Name (Request Support)</th>
<th>Topic</th>
<th>CoE School (Supporting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22/6 (Wed) 10:30 am to 11:30 am</td>
<td>4-7-2016 10:00am-12:00 pm</td>
<td>石籬天主教中學</td>
<td>個別學科教學法提供意見及支援 - 中學中文科</td>
<td>孔教學院大成何郭佩珍中學</td>
</tr>
<tr>
<td>/</td>
<td>07-07-2016 9:30-11:30am</td>
<td>佛教覺光法師中學</td>
<td>介紹如何使用平板電腦應用程式促進課堂上的教學</td>
<td>香港真光中學聖士提反書院</td>
</tr>
<tr>
<td>23/6(Thu) (9:00am-10:00am)</td>
<td>22/8/2016 2:30-5:30pm</td>
<td>道教青松小學</td>
<td>介紹如何使用平板電腦應用程式及內置功能促進課堂上的教學 電子學習課程規劃的經驗分享 (Flipped Classroom)</td>
<td>嘉諾撒聖心學校</td>
</tr>
<tr>
<td>/</td>
<td>5-7-2016 1:00-3:00pm</td>
<td>仁濟醫院趙曾學薇小學</td>
<td>Google apps for education</td>
<td>沙田崇真學校</td>
</tr>
<tr>
<td>/</td>
<td>29-8-2016 9:00am-12:00 nn</td>
<td>筲箕灣官立小學</td>
<td>個別學科教學法提供意見及支援 - 小學常識科</td>
<td>保良局王賜豪（田心谷）小學</td>
</tr>
</tbody>
</table>

As a result of the CoE documents and supporting workshops review, the project team identified some good practices; one of them is that the CoE teachers always pinpointed the importance of e-Learning with supporting pedagogical models and
theories (e.g., Bloom’s Taxonomy and Technological Pedagogical Content Knowledge (TPACK) Framework) and they always emphasize the direction of The Fourth Strategy on IT in Education. Moreover, some CoE schools provided a summary of observations and suggestions to the supported school which facilitated follow-up actions in the future. Some used themselves as examples for illustrating the adoption of e-Learning and how e-Learning can be planned, designed and implemented, with the hardware and resource requirement clearly specified. Furthermore, a list of common mobile apps is extracted from the CoE workshops and seminars. The project team summarized the list and it is included in the Resource Package with the functions of each mobile app for teachers’ and educators’ reference. The list is also included in the web search engine for easier searching. The CoE Documents Review Report is shown in Appendix B and the CoE Supporting Workshops Review Report is shown in Appendix C.

2.3.2 Phase 2 Interview Findings

To further understand the project impact, success factors, good practices and sustainability of the reviewed projects, the project team has conducted focus group interviews in three project schools. The project team conducted two site visits (around 2 hours for each visit) at each participating school. In the 1st site visit, the project team gave a brief introduction of the study to project leaders/teachers, and discussed the interview arrangement. In the 2nd site visit, the project team interviewed 3-5 teachers and some students, and distributed the questionnaires. The project team interviewed different stakeholders including teachers who were involved in the development and teaching of the project outcomes/deliverables to conduct teaching, students who were taught by the teachers mentioned above, and other project development team members who might not be involved in the teaching, such as principals initiating the project, technical support services (TSS) staff, and project staff, etc.

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Number</th>
<th>Name of Project</th>
<th>Name of School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QEF Project [2012/0102]</td>
<td>Building up a Community Network for Fostering Character Education</td>
<td>Lok Sin Tong Young Ko Hsiao Lin Secondary School</td>
</tr>
<tr>
<td>2</td>
<td>e-Learning Pilot Scheme project</td>
<td>The Youth of Creative Media Education</td>
<td>Chi Hong Primary School</td>
</tr>
</tbody>
</table>
To analyse the interview data, the researchers have scrutinized the interview reports several times and summarized the key points. Then, essential ideas are mapped to potential themes and relationships between themes have been connected to come up with the overall theme and patterns. Themes and patterns were then compiled according to the research questions. The full Phase 2 interview full report is provided in Appendix D and individual school interview reports are provided in Appendix E. Specifically, the interview feedback helps project team to find out more on:

1. The success factors for using e-Learning in school;
2. The impact of e-Learning on students learning; and
3. Challenges and suggestions stakeholders have

For (1), it is about the success factors for using e-Learning in school. The project team has identified seven success factors as below.

i. Easy to use
ii. Interesting and fun
iii. Instant teachers’ feedback
iv. Interactivity, Collaborative and peer learning
v. Flexibility
vi. Personalization
vii. Resource center

For (2), the impact of e-Learning on students learning, the interviewed teachers and students recalled their teaching and learning experience with e-Learning projects and identify the impacts of e-Learning summarized below.

i. Increase in interest and motivation
ii. Development of abilities and skills
iii. Self-directed learning
iv. Increase in learners’ satisfaction
v. Increase in sharing as a learning community

As for the challenges and suggestions stakeholders have [Point (3)], the interviewed
teachers involved in project development identified various challenges they met and gave suggestions for future improvements. They are summarized below.

i. Collaboration between schools and commercial organizations
ii. Sustainability
iii. Sharing and monitoring
iv. Hurdles and trends

2.3.3 Phase 2 Survey Findings

Other than interviewing different stakeholders, school surveys have been conducted. There are a total of 108 survey respondents from the three interviewed schools. It involved 60 teachers and 48 students. The breakdown of the total number of survey respondents are shown in Table 19.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>60</td>
</tr>
<tr>
<td>Student</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>108</td>
</tr>
</tbody>
</table>

Table 19: Number of survey respondents

The teacher respondents have completed the General Teachers Survey on e-Learning, measuring their view towards e-Learning. As for the student respondents, 26 of the student respondents have completed the General Students Survey on e-Learning, measuring their views towards e-Learning. The survey questions are shown in Appendix G. There are 22 student respondents completing the Students’ Satisfaction Survey. This survey is to examine the factors and correlation that affect students’ satisfaction and perceived usefulness of the e-Learning system they used. However, the sample size of student respondents for the Students’ Satisfaction Survey is too small and statistically insignificant. The project team has conducted data analysis on the General Teachers Survey on e-Learning and the General Students Survey on e-Learning, and the Phase 2 survey data analysis full report is shown in Appendix F.

It is found that the teacher respondents value the content quality as the most important criterion of an e-Learning project (Mean=4.07). Besides the content quality, the technical quality is also valued as an important criterion of an e-Learning project (Mean=3.96). Table 20 shows the criteria of e-Learning projects for student learning that the teacher respondents give their ratings to.
To further investigate and identify the success factors that have significant impact on the success and quality of e-Learning, statistical analysis have been conducted on ratings the teacher respondents gave to each survey question. 5 questions with the highest rating are extracted (Mean =>4). As shown in Table 21, teacher respondents think that to better facilitate student learning in an e-Learning project, it is most important to include up-to-date content and supporting materials, web-links with real-life examples (Mean=4.18 and Mean=4.10). The system should also be easy to use with clear fonts and suitable vocabulary for students' easier understanding (Mean =4.12 and Mean =4.08). Furthermore, it is essential for the learning materials to be interesting and attractive (Mean=4.08).

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Mean (=&gt;4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q12. Fonts (styles, color, and saturation) in the system should be easy to</td>
<td>4.12</td>
</tr>
<tr>
<td>read in both on-screen and in printed versions.</td>
<td></td>
</tr>
<tr>
<td>Q19. The quality of the learning materials in the system such as attractiveness</td>
<td>4.08</td>
</tr>
<tr>
<td>and motivation is essential.</td>
<td></td>
</tr>
<tr>
<td>Q21. The system should use vocabulary and terminology that are easy for students</td>
<td>4.08</td>
</tr>
<tr>
<td>to understand and follow.</td>
<td></td>
</tr>
<tr>
<td>Q23. The content should be up-to-date.</td>
<td>4.10</td>
</tr>
<tr>
<td>Q24. Supporting materials, web-links and given examples should be up-to-date</td>
<td>4.18</td>
</tr>
<tr>
<td>and real-life examples.</td>
<td></td>
</tr>
</tbody>
</table>

Table 21: Teachers’ view of success factors of e-Learning projects for student learning

For the students’ view towards e-Learning, it is shown that the student respondents have a positive perception towards using IT in their learning (M=4.24). As shown in Table 22, it also shows that the student respondents think that the technical quality of an e-Learning project is an important criterion (M=4.23).
In order to identify the success factors of e-Learning projects for student learning, 5 questions with the highest rating (Mean=>4.3) are extracted. The student respondents think that it is important for the fonts of the e-Learning system to be easy to read as well as the navigation (Mean=4.42 and Mean = 4.35). Moreover, they think that the e-Learning system should have a clear and organized structure for them to search for information and with multimedia learning materials in the system. (Mean=4.31). Details of the survey questions and their ratings are shown in Table 23.

### Survey question

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Mean (=&gt;4.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 12. Navigation of the system should be easy. 一個電子學習系統應該容易操作。</td>
<td>4.35</td>
</tr>
<tr>
<td>Q13. It should be easy for me to find what I want easily in the system. 電子學習系統的設計應該讓我在系統中容易地找到資料。</td>
<td>4.31</td>
</tr>
<tr>
<td>Q14. Fonts (styles, color, and saturation) should be easy to read in both on-screen and in printed versions. 不論在網頁上，還是在紙面上，一個電子學習系統的字體（字型、顏色、飽滿度）都應該清晰可讀。</td>
<td>4.42</td>
</tr>
<tr>
<td>Q 20. Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.). 電子學習系統上應有不同的多媒體電子教材輔助學習，如圖片、動畫、模擬的學習遊戲、影片和聲音等。</td>
<td>4.31</td>
</tr>
<tr>
<td>Q 34. The teacher should fix all the errors and mistakes in the materials on the system. 老師應該在系統上更改學習材料中錯誤的地方。</td>
<td>4.36</td>
</tr>
</tbody>
</table>

Table 23: Students’ view of success factors of e-Learning projects for student learning

Consolidating the interview and survey findings, both teachers and students agree that to better facilitate e-Learning in school, it is vital for the e-Learning system to be easy to use. It is essential to develop an e-Learning system with clear fonts, easy navigation and allows teachers and students to do simple searching for teaching and learning materials on the system. Moreover, interesting and fun learning materials help to engage students in using e-Learning in school. For example, the use of multimedia learning materials, such as videos and animations can help to attract students.
Furthermore, the interview feedback helps the project team to better understand the impact of e-Learning on students learning, sustainability of the existing projects, and challenges stakeholders have. It is found that it is a common practice for schools to contract commercial organization in developing the e-Learning system in order to handle technical difficulties. However, some schools may find it difficult in negotiating and collaborating with commercial organizations in terms of copy-right and technical support issues. To prevent the similar consequences from happening in future projects, they suggest that it is better to have support from the funding body in negotiating with the commercial organizations. It would also be better for the school/NGO to hold the copy-right of the tools/platform for future development of the tools/platforms.

2.4 Discussion of the Findings

The project team has worked with different sources, namely document review, survey and the focus group interview in the two phases (Figure 4). Main findings in the research project in Phase I study are related to the three criteria: Content, Pedagogy and Learning, and Scalability. Results from Phase II through both survey and interview are reconfirming the findings in the first phase. The inter-relationships of the research findings will be discussed in the rest of this section.

![Diagram of Triangulation of Research Findings]

Content
It has been found in the project document review that it is a good practice for the e-Learning project deliverable/product to be user-friendly and attractive. To further
support this finding in Phase 1, survey items have been designed and related to the three criteria in the Phase 2 study. Some survey questions are designed to collect good practices related to the content criterion, some are related to the pedagogy and learning criterion, and some are related to the scalability criterion. In the case of the content criterion, teacher respondents indicated that it is important for the e-Learning product/system to have easy-to-read and clear fonts, as well as to be attractive. (Q12, M=4.12; Q19; M=4.08) The two questions below are extracted from the General Teachers Survey on e-Learning together with the ratings given by the teacher respondents.

Q12. Fonts (styles, color, and saturation) in the system should be easy to read in both on-screen and in printed versions. (M=4.12)

Q19. The quality of the learning materials in the system such as attractiveness and motivation is essential. (M=4.08)

Student respondents also shared a similar view and valued a user-friendly and easy-to-navigate e-Learning product/system as important (Q12, M=4.35). The question below is extracted from General Students Survey on e-Learning together with the rating given by the student respondents.

Q12 Navigation of the system should be easy. (M=4.35)

Moreover, the interviewed teachers and students provided similar views in the interview sessions in Phase 2; they also shared that it is important for the e-Learning product/system to be easy-to-use and attractive. For example, an e-Learning system is appreciated by teachers as they can simply import existing teaching materials in Word/PPT/PDF formats to the system. Teachers and students’ view in the survey and interview in Phase 2 reconfirm the Phase 1 document review finding.

**Pedagogy and Learning**

For the pedagogy and learning criterion, different data sources related to this criterion have also been collected in the two phases and can be triangulated. For example, in the project document review, it is found that it is a good practice for the e-Learning product/system to apply sound pedagogical models supported by various multimedia, creating a good collaborative learning environment. For this result, there are similar results from the survey of Phase 2 supporting this finding. In the Phase 2 survey, the teacher respondents gave a high rating to Q18 (M=4.03), and the student respondents shared a similar view (Q20, M=4.31).
General Teachers Survey on e-Learning:

Q18 Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.). (M=4.03)

General Students Survey on e-Learning:

Q20 Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.) (M=4.31)

Both teacher and student respondents consider that it is important for the e-Learning product/system to build up a good platform for learners to collaborate with the support of various multimedia. The interviewed teachers and students provided a similar view on this finding. They also shared that a good e-Learning product/system should facilitate peer-to-peer collaboration, as well as make good use of multimedia instead of text. For instance, an interviewed student shared his experience in using videos to learn. He and his classmates watched videos about obesity, and discuss the causes and effects of this growing social phenomenon with teachers and peers in class. He shared that videos are more attractive to secondary school students like him. The teachers and students’ view in Phase 2 help to reconfirm the Phase 1 document review finding.

Scalability

For the scalability criterion, it is found that, in our project document review, it is a good practice for the e-Learning product/system to build up a learning community for students to interact with teachers and peers, and a learning platform for self-learning, catering students with different learning styles and special needs. There are similar views from the Phase 2 survey. Both teacher and student respondents agreed that it is important for the system to be interactive. The two questions below are extracted from the General Teachers Survey on e-Learning and the General Students Survey on e-Learning together.

General Teachers Survey on e-Learning:

Q17 Interactivity of the system is essential. (M=4.03)

General Students Survey on e-Learning

Q19 The system should be interactive. (M=4.17)

Moreover, the sharing by the interviewed teachers and students help to reconfirm the research finding related to this criterion. The interviewed teachers and students both
value the interactive feature of an e-Learning product/system such as providing instant teachers’ feedback. For example, one of the interviewed teachers shared that the auto-correction function in an exercise such as multiple choice questions is an important function in an e-Learning system. Also, the interviewed students shared that it is important for the e-Learning product/system to have a resources centre. For instance, one of the interviewed students shared his experience in using a web-based platform with past papers, multiple-choice exercises, and latest newspaper updates available on the platform. He commented that the platform with such resource centre is useful and convenient for his learning. The survey data and interview findings in Phase 2 echo back the document review data sources in Phase 1, reconfirming this good practice.
2.5 The Web-based Resources System

The QEF and non-QEF projects are valuable assets for teachers and education practitioners. Also, there exists a number of well-developed e-learning tools which can facilitate teaching and learning processes. A tailor-made web-based online system has been built up for retrieving the above-mentioned resources:

http://www4.comp.polyu.edu.hk/~qefitedu/user/search.php

The projects and tools are categorized based on Key Learning Area (KLA) and education sectors. Based on the project and tools descriptions, relevant keywords have been extracted based on natural language processing technology. Users of the system can efficiently retrieve these resources which facilitate course curriculum design and material preparation process. Particularly, two listings are given in the system:

1. QEF and non-QEF projects (e-Learning Pilot Schemes)
2. e-learning tools

Related project information has been uploaded to the system and the user guide for the web-based resource system is shown in Appendix H. A screenshot of the web-based resource system is shown below.

![Screenshot of the web-based resource system](image_url)
3. Resource Package

The project team has designed and developed a resource package based on the findings of this project. The Resource Package is divided into six sections. In Section A, we will have the introduction with an overview and current development of IT in Education. Then it is followed by a section on Good Practices and Project Exemplars. Based on the good practices extracted from the QEF projects and non-QEF projects review, the team has proposed lesson/activity plans with supporting documents and key steps in using various e-Learning tools in the lesson/activity.

During the development of the resource package, the project team has invited the teacher advisers to review and comment on the pedagogy, tools and instructions, the feasibility, and the organization of the proposed lesson or activity plans. The comments collected from the teacher advisers and the project team’s responses are shown in Appendix I. After collecting their feedback, we have revised the package according to their comments. The Resource Package also includes a list of e-Learning tools with their logos and functions for teachers’ and educators’ information. The e-Learning tool section is followed by a section on Learning Analytics. General description and the process of Learning Analytics will be provided as the project team would like to raise the schools’ and teachers’ awareness on the topic and understanding on the recent development. The Resource Package also includes a user guide on the web-based resource system to search for QEF and non-QEF projects as well as a list of well-developed and available e-Learning tools. At the end of the package, there is a list of references for potential further enhancement of the use of Information Technology in Education.

The project team has invited the teacher advisers to review and comment on the suggested activity plans in the resource package. Based on their comments, the project team has reviewed and revised the resource package.
4. Dissemination Seminar

The territory-wide dissemination seminar titled as ‘Connecting the Communities – IT in Education’ cum dissemination briefing on ‘Consolidation and Redevelopment (C&R) Work on Information Technology (IT) in Education’ was held on 10th February, 2017 (Friday) at The Hong Kong Polytechnic University. Principals, IT coordinators and teachers from primary, secondary and special schools were invited via email or fax to join the seminar.

In total, 120 participants, including principals and teachers from primary and secondary schools, university teaching staff, speakers, and representatives from the QEF and the Education Bureau joined the seminar. The aim of the seminar is to connect different education sectors for the sharing of good practices of IT in Education. The seminar was divided into two parts. The first part was sharing by experienced school educators and university experts of how IT platforms/tools can be adopted to support blended learning and innovative pedagogies. Then the second part was the presentation of the findings of the consultancy project by the principal investigator, Dr. Vincent Ng, and the project team members, Dr. Laura Zhou and Dr. Dennis Liu followed by a demonstration of a blended learning project in PolyU.

The program rundown for the dissemination seminar and some photos of the dissemination seminar are shown in Appendix J.
5. Conclusion and the Way Forward

The Consolidation and Redevelopment (C&R) Work on Information Technology (IT) in Education has extracted good practices from the selected QEF and non-QEF projects, namely the e-Learning Pilot Scheme projects, the Center of Excellence Scheme (CoE) projects, for further promotion through the production and dissemination of the resource package.

The C&R study has provided the project team a great opportunity to identify the success factors and experiences generated from the past projects. In Phase 1, concrete examples from the project documents review support the indicators in the three criteria as good practices, providing references for educators and teachers in developing e-Learning product/system in future. As Phase 1 only focuses on the e-Learning product, the quantitative and qualitative study in Phase 2 have provided the project team a good opportunity to identity more successful factors by reviewing the learning experiences of teachers and students. Teachers and students’ views in the Phase 2 study echo back the phase 1 study; consistent with the Phase I study, success factors in the evaluation framework such as functionality, usability, communication and media, collaboration etc. were also mentioned and identified by interviewees such as project members, teachers and students as essential to conduct a successful e-Learning projects.

The two-phase study has concluded that the 79 projects provide a number of good practices of IT in Education, and out of many examples of good practices of IT in Education, seven good practices are extracted and elaborated further in the resource package: six involves innovative teaching of different pedagogies and one on Community of Practice.

1. Enhancing Collaborative Learning
2. Interactive classroom
3. Blended learning to engage students in and outside the classroom
4. Enhancing student engagement and peer learning through creative communication
5. Effective adoption of multimedia technologies to facilitate situated learning
6. Gamification to increase student motivation and engagement

7. Community of Practice

Further to the dissemination of the resource package, it is recommended to set up a thematic network. The reasons for recommending the setting up of a QEF Thematic network (QTN) are as follow:

- Teachers may not be familiar with the pedagogical principles and strategies of e-Learning, and therefore, professional support is needed.

- There are a wide array of e-Learning tools available, and teachers may not be aware and/or familiar with the available tools. It is a good idea to share them with teachers.

- Some teachers may not be aware of the recent e-Learning development such as learning analytics. Collaboration among primary, secondary schools and universities on a mutual support platform like QTN is needed. Learning and teaching materials and experiences can be shared on such platform, while creating a Community of Practice at the end.

- We have identified a number of success factors of the reviewed projects in the C&R Work. It is a good idea to share them among schools.

- With the feedback collected from the dissemination seminar, teachers would like to know more about the developed resource package and how it can be implemented in schools.

The objectives of the QTN for IT in Education are:

- To try out and apply the pedagogical principles and strategies identified in the resource package to the classroom

- To form a Community of Practice to share experience and build a professional development network of IT in Education through the QTN
6. References


Appendix A - Phase 1 Study: QEF Projects Review

Report and Good Practices Extracted

QEF Projects Review (Phase 1) for Consolidation and Redevelopment Work on IT in Education

Prepared by:
Project Team (PM: Vincent Ng)
Department of Computing
The Hong Kong Polytechnic University
June 2016
QEF Projects Review

1. Developing Software Packages for Mathematics (Primary 2) [1998/0587]…39
2. Design and Development of a Series of Computer-assisted Learning of Mathematics (CALM) Packages for S1 Students [1998/1351]………………..41
3. The Hong Kong University of Science & Technology - Department of Mathematics [1998/2001]………………………………………………………42
4. Learning on Demand Model -- Phase I General Studies (Upper Primary) CD-ROM Production [1998/3840]…………………………………………………………44
7. An Interactive Educational CD-ROM & Web-site Project [1999/0982]………49
9. Building Learning Communities in Primary Schools through Project Works and Knowledge Construction [2000/1684]……………………………………………………53
11. School Online Teaching Consultancy and Online Teaching Resources for Junior Secondary Schools [2002/0790]………………………………………………58
12. Multi-school Collaboration in the Information Technology for Hong Kong Flora and Vegetation [2002/1009]…………………………………………………………60
13. Implementation Studies of a Web-based English Learning System in Primary Schools [2003/0350]……………………………………………………………63
15. Campus E-newsletter [2003/0562]……………………………………………………68
16. Quality Teaching Courseware [2003/0589]…………………………………………71
17. The Application of Geographic Information System in the Learning and Teaching of Field Studies in Geography [2004/0181]…………………………73
18. Web-based Language Awareness Learning Package for English Teachers [2004/0884]……………………………………………………………………….76
19. Utilizing GIS in School Geography: Education Software Development for Secondary Students in Hong Kong [2004/0921]…………………………….78
22. From Increasing Students’ Learning Interest and Confidence to Enhancing
27. Supply Chain Center of Science and Technology Education (Tai Po & North District) [2008/0248] ................................................................. 94
29. Sense Kids Yearn (SKY): The Hong Kong Creative Digital Storytelling Project [2008/0326] ................................................................. 97
31. Reading to Learn - A Path Directs to Brilliant Writing [2011/0080] .......... 100
32. Accelerating General Studies 2.0 AGS 2.0 [2011/0280] ......................... 102
33. Learning Language Through Animation [2012/0046] ......................... 105
34. Building up a Community Network for Fostering Character Education [2012/0102] ................................................................. 107
35. Digital Mobile Classroom [2012/0294] .................................................. 109
36. Speech Therapy iPad Applications for Special School [2012/0340] ......... 111
1. Developing Software Packages for Mathematics (Primary 2) [1998/0587]

**Project title:**
Developing Software Packages for Mathematics (Primary 2) [QEF 1998/0587]

**Level:**
Primary school

**Subject/KLA:**
Math/ME

**Target learners:**
Lower primary students

**Project material:**
CD

**Project period:**
1998-2000

**Deliverables:**
A set of interactive multimedia teaching materials includes teaching part and revision part for the mathematics subject for primary 2 students. The materials are placed on CD for use of teachers and students.

**General description:**
An interactive multimedia system stored on CD for teachers and students use in P2 math subject. There are 2 parts, teaching part and revision part. The teaching part consists of scenario-based math concepts and games to enable students to be motivated in their interest in math. The revision part provides interactive exercises for student self-learning.

**Current Status:**
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content

**Summary:**

**Good Practices observed**

- Related to Pedagogical and Learning
  - Provide multi-channels of learning and motivate students for math
interests
- Promote the self-learning ability of students
- Have discussions of the materials between teachers for professional training
- Scenario-based learning to overcome abstract concepts
- Teachers co-designed and co-developed the materials.
- Using math games to promote students’ interest in math. Interactive revision exercises for student self-learning

- Related to Scalability
  - Using a control group to assess the difference after using the package (P2 AM vs P2 PM)
2. Design and Development of a Series of Computer-assisted Learning of Mathematics (CALM) Packages for S1 Students [1998/1351]

Project title:
Design and Development of a Series of Computer-assisted Learning of Mathematics (CALM) Packages for S1 Students

Level:
Secondary School

Subject/KLA:
Mathematics/ME

Target learners:
S1 Secondary School Students

Project material:
CD

Project period:
1998 – 2000

Deliverables:
CD-ROM

General description:
The project developed a teaching package for teaching mathematic topics including arithmetic, algebra and geometry. The teaching package consists of animations, narration, exercises and games.

Current Status:
For this project, 3 CDs collected from the QEF office are not readable. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content

Summary:

Good Practices observed

Not applicable as the content is not observed.
3. The Hong Kong University of Science & Technology - Department of Mathematics [1998/2001]

Project title:
A HKUST Initiative for the Enhancement of Teaching and Learning in Science Subjects in the School Sector

Level:
Senior Secondary

Subject/KLA:
Science Education/SE

Target learners:
Science teachers
Senior Secondary school students

Project material:
http://www.edp.ust.hk/kids/cgi-bin/web/index.php (mentioned in the final report but not relevant to the original project)

Project period:
1998 - 2001

Deliverables:
- Teachers trainings, including IT subject-based training course, short course, laboratory training course, seminar on quality education and education reform and residential workshop
- Student enrichment program, including a Science web site and a summer school program organized between the university and the secondary school
- CDs

General description:
The project aims to enhance the quality of teaching and learning in science subjects in the School sector by providing teacher training and student enrichment programs. By providing IT training to science teachers, the project also built a resource center for useful teaching materials available on the internet. The project also provided learning resources to students and science camp to selected talent students which aimed to arouse students’ interest to pursue a career in science and engineering.

Current Status:
For this project, the CD has not been found and the review of the contents is not done.
At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content
Summary:

**Good Practices observed**

- Related to Pedagogical and Learning
  
  o It’s beneficial to involve university students (UG and PG) in e-Learning projects like the current project. The benefits are two-fold. For university students, participation encourages the sense of responsibility and encouraging them to further study their subject-related materials. For project, online support can be maintained where student helpers are available to help.
  
  o It’s a good practice to not only deliver training programs to teachers but also build up learning community among all participant teachers to share experience and summarize/consolidate valuable resources and practices into tangible deliverables (i.e. CD in this projects)
4. **Learning on Demand Model -- Phase I General Studies (Upper Primary) CD-ROM Production [1998/3840]**

**Project title:**
Learning on Demand Model -- Phase I General Studies (Upper Primary) CD-ROM Production [QEF 1998/3840]

**Level:**
Primary school

**Subject/KLA:**
General Studies /GS

**Target learners:**
Upper primary students

**Project material:**
CD

**Project period:**
1999-2000

**Deliverables:**
A set of interactive multimedia teaching materials including hyperlinks to materials on the Internet for learning of living beings (animals and plants) and associated ecology in the general science subject for primary 5/6 students. The materials are placed on CD together with hyperlinks for use of teachers and students.

**General description:**
An interactive multimedia system stored on CD for teachers and students use in P5/6 general science subject. The materials in the CD contain hyperlinks to information in the Internet to support more recent development in the area. Learning on Demand is used as the teaching pedagogy design with scenario-based exercises for students to try out after classes.

For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

**Current Status:**
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content
Summary:

Good Practices observed

- **Related to Pedagogical and Learning**
  - Learning on Demand to support different learning pace and diversity.
  - Students can study with parents’ participation and encouragement.
  - Scenario-based materials for better learning effectiveness.
  - Support multi-level learning for student diversity.
  - Design of materials based on concept map.
  - Well use of multimedia.
  - Parents are involved to test and provide comments on the platform.
  - Teachers can share and discuss among peers.
  - The platform is supported by an external collaborator: HKPC.
  - Students collaborated with a school in New Jersey, USA in video conference and then worked on assignments.
  - Using math games to promote students’ interest in math.
  - Interactive revision exercises for student self-learning.

- **Related to Scalability**
  - Good dissemination planning.
  - Good assessment approach.

Project title:
Ho Koon Nature Education cum Astronomical Centre

Level:
Secondary School

Subject/KLA:
Geography and Biology/PSHE & SE

Target learners:
Senior Secondary School Students

Project material:
CD

Project period:
1999 – 2001

Deliverables:
CD-ROM

General description:
The project developed a teaching kit for secondary school teachers. The kit includes teaching materials of two subjects, geography and biology and it contains photos and videos of plants, organism cells, marine life, and celestial objects.

Current Status:
There is one CD collected but it is not readable. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content

Summary:

Good Practices observed

Not applicable as the CD-ROM consists of only photos and video clips.

Project title:
Exploring Urban Geography - A Computer Assisted Learning Package for Hong Kong Students

Level:
Secondary

Subject/KLA:
Geography/PSHE

Target learners:
All geography teachers and secondary and sixth form students taking geography

Project material:
CD

Project period:
1999-2000

Deliverables:
- CD Roms with teachers’ manuals and students’ worksheets
- Seminar for geography teachers to introduce the products to teachers: 300 attendees

General description:
The project developed a computer-assisted learning package to help teachers and students enhance the quality of teaching and learning of geography through the use of information technology. The package in 5 CDs comprise two modules: the first one is a virtual field trip activity designed for secondary school students. It is particularly suitable for teaching the new junior secondary geography curriculum to be implemented in 1999-2000. The second module is a town planning exercise for sixth formers to deepen their understanding of the essential concepts in urban geography.

Current Status:
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content
Summary:

**Good Practices observed**

- Related to Scalability
  - Can be used by any student studying geography
  - The product has restricted usage and can be only used by geographic subject and not easily to extend to new version
7. An Interactive Educational CD-ROM & Web-site Project [1999/0982]

Project title:
An Interactive Educational CD-ROM & Web-site Project [QEF 1999/0982]

Level:
Secondary school

Subject/KLA:
Art and Design/AE

Target learners:
Junior secondary students

Project material:
CD and Website

Project period:
2000-2001

Deliverables:
A set of interactive multimedia teaching materials on a CD as well as a website of Art and Design subject for the lower forms in secondary schools have been developed. It provides a living art database and art archive for life-long learning and self-learning of art. Macromedia Flash and PDF are used. Latest update is June 2001.

General description:
An interactive multimedia system, Artscape 1.0, is developed and stored on CD which is supplemented with materials on the website, Artscape Online. The CD contains games, adventure story, animations, videos and audio clips. It has different sets of materials on the CD. Some of teachers only; others are for students. VR is also supported.

Current Status:
For this project, one CD is available for review and the review of the contents has been done. Moreover, the proposal and final report have been reviewed as well.

Information Technologies/Tools Applied:
Multimedia content
Summary:

Good Practices observed

- Related to Content
  - Comprehensive materials related to visual arts
  - Hyperlink based interactions
  - VR is supported and simple animations
  - Clear structure

- Related to Pedagogical and Learning
  - Formation of editorial board from schools and HK Visual Arts Network. Teacher involvement in the project with different capacity

- Related to Scalability
  - Materials are available to the public

Project title:

Level:
Primary School

Subject/KLA:
Chinese/CLE

Target learners:
Primary School Students

Project material:
http://www.dragonwise.hku.hk/dragon2/index.html

Project period:
2001 - 2002

Deliverables:
Website and Flash

General description:
The project developed a web-based learning system for primary school students to study Chinese characters.

Current Status:
A website is available for review and review of the content has been done. The project proposal and final report have been reviewed as well.

Information Technologies/Tools Applied:
Flash, web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - The system is able to provide tools for students to study various aspects of Chinese characters.
  - IE Compatibility problem. Bigger fonts are more suitable for junior students.
  - The tools are systemically arranged in the system and easily accessible by learners.

- Related to Pedagogical and Learning
  - Focusing the in-depth knowledge of Chinese character.
  - A concise design of the user interface in the exercise sections.
  - Examples of teaching materials and exercises

Remark: Two separate front-ends, one for teachers and one for students, should be developed.
9. **Building Learning Communities in Primary Schools through Project Works and Knowledge Construction [2000/1684]**

**Project title:**
Building Learning Communities in Primary Schools through Project Works and Knowledge Construction 從知識建構和專題研習建立學習社群

**Level:**
Upper primary

**Subject/KLA:**
Project based learning/PJL

**Target learners:**
6 primary schools under catholic education office
24 primary five teachers from the 6 schools
1200 primary five students from the 6 schools

**Project material:**
http://www.lcp-hk.org/ (404 error)

**Project period:**
2001 - 2002

**Deliverables:**
- A permanent website: www.lcp-hk.org for the project: knowledge forum, collaboration between different students to do discussion on specific science topics and then conduct reporting on the learning outcomes. The learning conducted can be either online or at home
- Training: teachers and students are trained with basic knowledge and skills in order to communicate, retrieve information, and publish information over the Internet as well as trained to facilitate and participate in project-based learning and knowledge construction using KF
- CD rom of the details of the project
- Report book of the project

**General description:**
The aim of this project is to build learning communities in primary schools through project works and knowledge construction. In this project, a web-based support environment for use in primary schools that is capable of providing resources and support to students and teachers engaged in science project works was developed. Students, teachers, and invited experts were participating in the investigation, discussion and construction of knowledge using the Knowledge Forum (KF)
throughout the process. The objectives are:

- Develop and promote active, self-directed and constructivist learning culture among primary students and teachers
- Develop teachers’ knowledge and skills as project facilitators in helping students’ construction of knowledge
- Let students work on projects in student-centered approach
- Develop and implement ICT-based resources and communication platform to support this culture
- Further investigate and understand the difficulties and issues involved in implementing this culture in primary schools

**Current Status:**
The website for the project is inaccessible and the review of the contents is not done. At present, project details in the CD room, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**

**Good Practices observed**

- Related to Pedagogical and Learning
  - Provide sufficient training and support to teachers and students when initiating new learning approaches so that the implementation and the output could be fulfilling the expectation

- Related to Scalability
  - The project can benefit all primary school students in Hong Kong. Use systematic evaluation method so that project outcomes can be sound for research publications. This projects have publications in local conferences
  - Has the potential to apply to other disciplines other than science
  - Hard to extend and the permanent website is not available now

Project title:
The Splendid Chinese Culture - Web-based Learning for Chinese Studies [QEF 2001/0446]

Level:
Secondary school

Subject/KLA:
Cross-curricular-- Chinese Language Education, Chinese Literature, Chinese History/CC

Target learners:
Junior and senior secondary students

Project material:
Website

Project period:
2002-2003

Deliverables:
Web-based platform includes 18 series and 200 topics of materials in Chinese culture. The website has a large number of pictures, descriptions, animations, videos and 3d animations to replicate ancient artefacts and buildings for special effect. Available at http://www.chiculture.net/ (June 12, 2016)

General description:
A multimedia website contains a large number of Chinese culture related materials presented in different formats. The website can support the teaching/learning for secondary schools in the Chinese language, Chinese history and Chinese culture subjects. Some updates up to April 2016.

Current Status:
The website for this project has been found and the review of the contents has been done. Moreover, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - 18 series and 200 topics, comprehensive materials
  - The website established is easily accessible. It is also well designed and easy to use. Moreover, some videos provide both PTH and Cantonese versions.
  - Engaging videos, colourful animations, and interactive quiz games related to Chinese history and culture are very attractive.
  - Clear structure of different contents; the website is well organized with 18 categories clearly defined and more than 200 topics covered.

- Related to Pedagogical and Learning
  - Primary and secondary school students
  - Provide a “teaching compass” to aid teachers and students on the use/outline/contents of the materials. Not being observed from the website. Student self-reflection to support critical thinking and self-learning
  - Setting up QA mechanism of teachers and education stakeholders via survey and evaluation forms. Facebook link available
  - The website can stimulate self-learning, as there are “Reflection corner”, “Site-map” and “Pedagogy and Learning Guide” for users’
reference.
  - Materials consultation with different stakeholders

- Related to Scalability
  - Effective dissemination planning
11. School Online Teaching Consultancy and Online Teaching Resources for Junior Secondary Schools [2002/0790]

**Project title:**
School Online Teaching Consultancy and Online Teaching Resources for Junior Secondary Schools

**Level:**
Secondary School

**Subject/KLA:**
e-Learning/ITE

**Target learners:**
Secondary School Teachers

**Project material:**
http://study.olta.org.hk (Website inaccessible)

**Project period:**
2003 – 2005

**Deliverables:**
Website, Content Management System

**General description:**
The project aimed to provide a web-based system which facilitates school-based Curriculum Development and sharing of teaching experience and resources.

**Current Status:**
The website for this project is inaccessible and the review of the content is not done. At present, the project proposal and the final report have been reviewed. Well-developed and open-sourced course content management system should now be available and it is more cost-effective that these online resources should be utilized with customization, fulfilling the needs of individual schools.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**
Not applicable as the content is not observed. Website inaccessible. Assessment based on final report and user manual.

**Good Practices observed**
• Related to Pedagogical and Learning
  o The objective is fulfilled by providing a collaborative platform for teachers.
  o The system provides a collaborative platform for teachers to create, manipulate, store and share teaching materials online.
12. Multi-school Collaboration in the Information Technology for Hong Kong Flora and Vegetation [2002/1009]

Project title:
Multi-school Collaboration in the Information Technology for Hong Kong Flora and Vegetation (a Web-based Database and training for Hong Kong flora and vegetation 香港植物及植被網上電腦庫及訓練)

Level:
Secondary

Subject/KLA:
Extra curriculum, biology/SE

Target learners:
The website is open to all who are interested in natural trails, flora and vegetation
The process of project development helped around 160 students learn how to conduct field study and record the learning in the format of website

Project material:
Website - http://www.hkflora.com/
Project details and final report

Project period:
2003 –2005

Deliverables:
A website for training of students and teachers, and publications, e.g. promotion leaflets, a magazine article and abstracts in international conferences have been developed.

General description:
The project has the following objectives
- To establish “QEF Plant study sites 優質教育基金植物演習點” and “QEF Plant Trails 優質教育基金植物徑” in different parts of HK
- To attract or encourage students to explore deeper and broader areas beyond those covered in school
- To give students the satisfaction of achievement through regular and extra-curricular activities, such as researches and innovative designs

Current Status:
The website is open to all but it may not be very scalable as it is dedicated for the
subject. Also, the project proposal and the final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**

**Good Practices observed**

- Related to Content
  - Good to use panoramic photos to show the real situation along the trails and provide hotspot on different plants
  - An innovative integration of IT, botanical science, art (literary) and education

  **Remarks:** On the usability, it is not easy to control the 360° picture and pinpoint the plant.

- Related to Pedagogical and Learning
  - Involve 135 students in the project: identifying and taking photos of the plants in the sites or along the trails, coaching them to prepare reports, editing reports, loading reports on the website and get the award. Project outcome designed and developed by secondary school students, i.e. Tai O ecotours: [http://www.hkflora.com/v2/projects/proj_mangrove/tai_o/index.htm](http://www.hkflora.com/v2/projects/proj_mangrove/tai_o/index.htm)
  - Use texts and picture together to introduce plants

- Related to Scalability
  - One centralized website to store all
    - Learning materials
    - Students projects
    - News, stakeholder information, events, useful links etc.
  - Publicize the outcomes to benefit more people:
    - e-Zone, Ming Pao, ATV all reported the project
    - Demonstration in public events: alumni day of the Chinese university of Hong Kong, QEF project exposition
    - Presentation and demonstration of the virtual sites and trails in international conferences
electronic greeting cards to local and overseas receivers

the website is searchable by search engines and linked by international websites

- The project suggests that quality education programmes should if possible include the following six elements

- Further enriching the materials and/or contents covered in subjects taught in school

- Attracting or encouraging students to explore deeper and broader areas beyond those covered in schools

- Giving students the satisfaction of achievement through regular and extra-curricular activities, such as researches and innovative designs

- Providing the basis for exploration for applying the materials learnt and/or conceived to career development

- Equipping and then mobilizing interested students to eventually contribute to the targeted industries in Hong Kong

- Raising student morality and language capabilities
13. Implementation Studies of a Web-based English Learning System in Primary Schools [2003/0350]

Project title:
Implementation Studies of a Web-based English Learning System in Primary Schools

Level:
Primary school

Subject/KLA:
English/ELE

Target learners:
Teachers – environment for developing material/teaching resources
Students – interactive games

Project material:
CD

Project period:
2003

Deliverables:
Web-based platform and CD

General description:
A web-based English Learning System (WELS) was developed in 2003 by AIMtech Centre of City University to provide an environment for teachers to design materials and use the share books approach to tell stories to help students learn English.

Current Status:
There are some grammatical/spelling and pronunciation errors in the contents. Moreover, animations are attractive but playground activities appear dated (and repetitive). The deliverables can be reused and redesigned but flash-based objects are difficult to scale up. Materials could be updated but with considerable amount of effort.

Information Technologies/Tools Applied:
Flash, web pages in HTML

Summary:

Good Practices observed
Related to Content
  o Flash-based so difficult to update. Good practice by 2003 standards.

Related to Pedagogical and Learning
  o Sound by 2003 standards.
14. Establishing a Scalable Network of Knowledge Building Schools [2003/0410]

**Project title:**
Establishing a Scalable Network of Knowledge Building Schools [QEF 2003/0410]

**Level:**
Primary, Secondary, Cross-sector

**Subject/KLA:**
ITE

**Target learners:**
Primary and secondary students

**Project material:**
Website lcp.cite.hku.hk/resources/KBSN/intro_TC/default.html
Website tutorials: http://kf-soc.cite.hku.hk/

**Project period:**
2004-2006

**Deliverables:**
The project is to develop a model and a repository for the sustainable integration of computer-supported knowledge building in primary and secondary schools. It includes a knowledge forum (base) available in the Web supporting collaborative design, subject development, learning activity guidance and student learning assessments.

**General description:**
A web platform has been developed to enable teachers to share and collaborate on subject design, teaching/learning activities and student progress assessments. Teachers from different schools have co-designed materials for subjects like physics, biology, chemistry, etc. There are 12 subjects involved covering primary and secondary school curriculum. Students can work with teachers to construct new knowledge units for life-long learning development.

**Current Status:**
The website is available for review and the review of the contents has been done. Moreover, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - Sufficient functions to create new knowledge units
  - A simple interface for knowledge construction.
  - Moreover, the Knowledge Forum established helped building a local school network. Teachers were able to build the necessary understanding and expertise to design knowledge building curricular that are suitable for their own students.

- Related to Pedagogical and Learning
  - To promote life-long learning by supporting students to create new knowledge units
  - Co-creation of materials support peer learning
  - Students can use the KF tool to learn and design at a high level
  - Sharing/discussions among students and teachers
  - The goal-oriented activities/ competitions organized in this project helped to motivate and engage learners to participate.
- Related to Scalability
  - The KF tool and activities can be used to support many subjects
  - The tool has not been updated for a number of years
15. Campus E-newsletter [2003/0562]

**Project title:**
Campus E-newsletter [QEF 2003/0562]

**Level:**
Secondary school

**Subject/KLA:**
eNewsletter/Others

**Target learners:**
Junior and senior secondary students

**Project material:**
2 x CD

**Project period:**
2004-2006

**Deliverables:**
A web-based application (ECNEWS) available into 2 CDs for supporting the creation and editing of school eNewsletters. The application is available both in Windows and Linux platform. It uses the Apache Tomcat web server, MySQL database system and materials are presented as web pages and papers.

**General description:**
A web application is developed with the support of CINTEC in CUHK for the management of school eNewsletter. The application includes components as User Manager, File Manager, Composer, Search Tool, Workflow Manager, Publish on Web Tool, Publish on Paper Tool, Reader’s Comment Manager and Administrator Manager. The application is basically a publication system based on CnewsML and helping students to follow the workflow of a typical publisher for making their school newspaper.

**Current Status:**
Two installation CDs are available and the review of the contents has been done. Furthermore, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content
Please enter the following values

Root root password: 
Root root email address: root@schcode.edu.hk

School school code (Minimum 10 digits) Cannot be changed afterwards:
schcode
School administrator password:
schadmin@schcode.edu.hk
Summary:

Good Practices observed

- Related to Content
  - The system is based on the format of NewsML which matches the standard used by international new publishing organizations. The system is a comprehensive tool to support different aspects of a publisher. It is a good chance for students to learn about how a newspaper is made.
  - Simple web interfaces
  - It has a clear structure of different tools. Also, the system is well programmed with use manuals for different roles.

- Related to Pedagogical and Learning
  - Encourage students to learn more from writing. Awareness of social events and community
  - Encourage the use of IT for collaborative editing
  - Encourage teamwork and improve students’ interpersonal communication skills through publishing newsletters in a team. Moreover, with discussion and group work, students were able to express ideas and content through using different types of media.
  - The system helps to maximize students’ creativity to release their newsletters.
  - CINTEC encourages collaboration between teachers and students by providing training camp to teachers and students, organizing a joint-school competition and sharing talks to other schools.
16. Quality Teaching Courseware [2003/0589]

**Project title:**
Quality Teaching Courseware

**Level:**
Primary School

**Subject/KLA:**
Chinese, English, Mathematics, General Studies/CLE, ELE, ME, GS

**Target learners:**
Primary School Students

**Project material:**
http://www.bwcss.edu.hk/eSchoolbag/

**Project period:**
2004 - 2005

**Deliverables:**
Website and Flash

**General description:**
The project developed a series of courseware available in the school website to facilitate student learning in Chinese, English, Mathematics and General Studies.

**Current Status:**
The website for the project is available for access and the review of the content has been done. The proposal and final report have been reviewed as well.

**Information Technologies/Tools Applied:**
Flash, web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - The teaching courseware is well structured and organized, including an introduction, objectives, procedures, assessment and evaluation. For some of the teaching courseware, there is a Teachers’ discussion page for reference.
  - The interface sometimes is overwhelmed with information. Yet, the teaching courseware is well structured and for some of them can still be used in class in 2016.
  - Well utilization of multimedia technologies to present ideas. Some of the teaching courseware is well-designed and include graphs and colourful clip arts.

- Related to Pedagogical and Learning
  - The system provides comprehensive and well-developed learning tools for a variety of KLAs.
  - The Flash courseware is provided in association with well-defined teaching plan for each topic.
  - The learning tools make good use of multimedia technologies to motivate student learning. Some of the courseware are very attractive with audio clips provided (English and Chinese).
  - The lesson plan is well structured. With the student evaluation included in the teaching courseware, teachers and the school are able to collect feedback for learning.
  - In 2003, in terms of the design and technology, some of the courseware is well-designed and attractive; there is a large variety of assignments for students such as drag-and-drop questions and fill-in-the-blank questions. These help to motivate and engage students in participating in class and learning.
17. The Application of Geographic Information System in the Learning and Teaching of Field Studies in Geography [2004/0181]

Project title:
The Application of Geographic Information System in the Learning and Teaching of Field Studies in Geography

Level:
Secondary

Subject/KLA:
Geography/PSHE

Target learners:
All secondary school geography teachers and students can benefit

Learning materials for teachers (professional development for geography)

Project material:

Project period:
2005 - 2006

Deliverables:
- CD (need to install third-party software to use the materials in CD-ROM)
- Professional development courses for teachers
- Implementation in classroom teaching and field studies

General description:
This project is to develop e-Learning materials which can help gain the following outcomes:
- enhance teachers’ competency on the geographical knowledge and skills
- develop a sharing and professional network of teachers on the pedagogies of geographic information system
- arouse students’ learning interest in geography

Current Status:
Need to download third-party software i.e. ArcReader. Tried but failed to register for downloading. Therefore, the interactive map could not be observed. Moreover, deliverable in the format of CD-ROM is not suitable for today’s context. Materials that can be reviewed are mainly in written format without interactive feature. This project deliverable may not be very scalable as it is dedicated for geography subject.
Moreover, CD-ROM materials are not easy to upgrade to the state of the art.

**Information Technologies/Tools Applied:**
Multimedia content

**Summary:**

**Good Practices observed**

- Related to Content
  - Well organized.

- Related to Pedagogical and Learning
  - Not applicable as the content is not observed due to unable to install ArcReader. Review based on the final report.
  - The project has very clear objectives and target group. It also designed learning materials and activities according pedagogical models.
  - The use of the CD-ROM in teaching and learning is reported to be collaborative and team work. Team work/group work are emphasized in the learning process in field studies.
  - The use of the CD-ROM in teaching and learning is reported to be collaborative and team work.
  - Use real-life examples and materials to engage students. Meets the real needs: identify the problems in using GIS in school environment and provide solutions.

- Related to Scalability
  - Teachers could adjust and tailor for the learning ability of their students and develop their own tailor-made task sheets and learning and teaching materials.
  - Teachers can produce their own tailor made materials in any field sites they like after acquiring the required skills in the workshops and training sessions. Thorough evaluation plan includes
    - survey questionnaires from students and teachers
    - students’ project report assessments
    - lesson observations
    - discussion and evaluation meetings
  - Good maintenance by uploading all materials in a centralized
repository

- Not only produce materials, but also organize sharing, training, professional development opportunities for teachers to equip them with better knowledge/competence and alleviate their anxiety because of curriculum change.
- Set up a link among: educational bodies, government department and commercial sectors.
18. **Web-based Language Awareness Learning Package for English Teachers [2004/0884]**

**Project title:**
Web-based Language Awareness Learning Package for English Teachers [QEF 2004/0884]

**Level:**
Primary/Secondary

**Subject/KLA:**
English/ELE

**Target learners:**
English teachers

**Project material:**
Website

**Project period:**
2005-2006

**Deliverables:**
A web-based platform supports the language awareness learning of teachers to teach their students. The platform provides a framework for teachers to creating the awareness using authentic text and demonstrating how specific language features can be employed in achieving the writers’ purposes as evident in different text-types.

**General description:**
The website, WEBLA, is to promote the language awareness of the English teachers under a theoretical framework. Under the framework, it has different types of activities and tests. Authentic articles, templates and discussion forums are included to allow teachers to learn through the platform on a self-directed basis. Some articles are from SCMP and the development work was supported by CUHK.

**Current Status:**
The website for the project is available for access and the review of its content has been done. The project proposal and final report have also been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - Hyperlink interactions
  - Clear structure of different contents

- Related to Pedagogical and Learning
  - Three levels designed for different purposes and objectives
  - Focus group discussion
  - Working with CUHK ELT unit

- Related to Scalability
  - Organizing and participating in forums, symposiums, and conferences

Project title:
The Application of Geographic Information System in the Learning and Teaching of Field Studies in Geography

Level:
Secondary School

Subject/KLA:
Geography/PSHE

Target learners:
Secondary School Students

Project material:

Project period:
2005 – 2007

Deliverables:
A Flash-based application, in the format of CD-ROM

General description:
The software contains a collection of learning-and-teaching materials on application of geographical information system (GIS) in field studies in four different field sites in Hong Kong.

Current Status:
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content, Flash

Summary:

Good Practices observed

- Related to Content
The instructions, learning materials and tools are well-organized and easily accessible by learners and teachers.

- Related to Pedagogical and Learning
  - The software facilitates teaching-and-learning in field study in the Secondary School Geography subject.

**Remarks:** Communication and media - Worksheet in .pdf format is provided. External software (ArcView an ArcReader) is required.

**Project title:**
Developing e-Learning Platform for Students with Special Educational Needs [QEF 2005/0102]

**Level:**
Pre-primary, Primary, Special, Cross-sector

**Subject/KLA:**
ITE

**Target learners:**
Pre-primary, Primary, Special, Cross-sector

**Project material:**
Web-based Learning Platform and DVD

**Project period:**
2006-2008

**Deliverables:**
A web-based learning platform was designed to support teaching material preparation, access, student progress evaluation and interactive learning.

**General description:**
The web-based learning platform is available for different levels of special schools. Teaching/Learning materials include study topics, exercises, games to support better learning interactions. By analyzing the access logs of platform, learning progress of students can be attained.

**Current Status:**
For this project, the web-based learning platform is not available for access and the DVD has not been found. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content, web pages in HTML
Summary:

**Good Practices observed**

- Related to Pedagogical and Learning
  - Two schools worked closely
  - Review study patterns of individual students

Project title:  
Web-based Mathematics Learning Platform 網上數學學習平台

Level:  
Primary and secondary

Subject/KLA:  
Mathematics/ME

Target learners:  
1400 Primary 3 - F3 secondary school students

Project material:  
Web-based learning platform

Project period:  
2006 - 2008

Deliverables:  
- Website  
- Installation CD  
- Sharing sessions: seminars and sharing by teachers

General description:  
This project targets to help students with collaboration skills, problem solving skills and self-discipline skills. There are three schools (one secondary and two primary schools) participating in the project. The online platform built up consists of 2 parts: Discussion area; self-learning area and question bank. Self-learning area provides extra curriculum learning materials. Question bank provides a self-evaluation system for all students.

Current Status:  
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:  
Multimedia content, web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - Not applicable as the content is not observed.
  - Based on the report, the online platform provides solution of suitable input methods for mathematical signs, formulas and graphs. It also provides innovation voice input methods.
  - Content control: all learning materials are approved by experienced teachers to make sure the quality and suitability.

- Related to Pedagogical and Learning
  - By reviewing the final report, it seems that the project has very clear objectives and target group. It also has designed learning materials and activities according pedagogical models. Moreover, the idea of having a question bank is good, such as providing past paper questions for students’ reference.
  - The development of online learning materials also provides professional development for teachers.
  - Based on the report, online platform enhances the collaboration, sharing among students.

- Related to Scalability
  - All students can make use of the online platform and access question banks and self-learn. The auto-marking function of the platform is a good practice as students can immediately know the result and keep track of their learning process.
  - Same online platform can be set up for different subjects.
  - The experiences and learning materials built up during the project can be reused.
  - Good evaluation approach: study the correlation of the use of the platform and students’ academic improvements.
22. From Increasing Students' Learning Interest and Confidence to Enhancing Students' English Language Skills [2006/0120]

Project title:
Increasing students’ learning interest and confidence in learning with multi-sensory instructional technologies

Level:
Primary school

Subject/KLA:
English/ELE

Target learners:
Teachers/Parents – address learner diversity with multi-level and multi-sensory instructional technologies
Students – making them interested in learning and self-learning (from classroom to home)

Project material:
School-based courseware – www.bwys.edu.hk/am/study/index.html

Project period:
2007-2008

Deliverables:
Web-based platform

General description:
A school-based curriculum interactive web platform was developed in 2006 to extend classroom learning to home learning, and promote learner diversity.

Current Status:
Some hyperlinks do not work and can only see lists of (and links to) English resources. Project proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Web pages in HTML
Summary:

**Good Practices observed**

- Related to Pedagogical and Learning
  - Rich, multi-sensory or multimedia instructional material is a lasting and impactful way of conducting a lesson and engaging the students.

- Related to Scalability
  - It has chosen the most up-to-date technology of implementing email, interactive web platform for extending learning from classroom setting to students’ home.
23. Enhancement of the Facilities in Mathematics Room [2006/0198]

Project title:
Enhancement of the Facilities in Mathematics Room [QEF 2006/0198]

Level:
Junior Secondary school

Subject/KLA:
Math/PJL, ME

Target learners:
Junior secondary students

Project material:
CD

Project period:
1998-2000

Deliverables:
An interactive classroom is designed to promote student learning on math subject. It included hardware, software and related teaching materials. CD and a learning package have been developed.

General description:
A specially design classroom to promote the learning of mathematic subject. Hardware and software have been deployed with new teaching materials developed. It encourages the co-learning activity between students and aims to explain difficult math concepts to students.

Current Status:
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content
Summary:

**Good Practices observed**

- Related to Pedagogical and Learning
  - Promote peer learning between students
  - Collaborated with a school in GZ

- Related to Scalability
  - Disseminated through teacher sharing workshop

Project title:
A Chinese Handwriting Assessment Tool (CHAT) for Assessing & Evaluating Handwriting Performance of Primary School Children in Hong Kong

Level:
Primary School

Subject/KLA:
Chinese Handwriting/OTH

Target learners:
Primary School Students

Project material:
http://vache.cs.cityu.edu.hk/chatweb/process.html

Project period:
2008 – 2011

Deliverables:
Java-based system, CD, Training Programme

General description:
The project developed a Chinese handwriting assessment software to assess handwriting performance of primary school students.

Current Status:
For this project, the CD has not been found and the review of the contents is not done. At present, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content

Summary:

Good Practices observed
Not applicable as the content is not observed.
- Related to Pedagogical and Learning

Remarks: The tool is research-based and the data collected have to be evaluated by teachers/researchers first. No direct impact on student learning.

**Project title:**
Internet-based Education for Design and Innovation [QEF 2007/0294]

**Level:**
Secondary school

**Subject/KLA:**
TE

**Target learners:**
Junior secondary students

**Project material:**
Website: (http://137.189.100.118/course/) – 404

**Project period:**
2009-2011

**Deliverables:**
An online design platform, including a design tool for converting 2D designs to 3D designs. Also, there is an online learning platform hosted in CUHK with a set of design curriculum.

**General description:**
The project was to promote Design and Technology education and to develop students’ life-long self-learning skills and their sense of creation through learning, working on design projects via online platforms. Through the training on the platform, students can learn the basic knowledge in design, robotics, mechanical engineering, computer engineering, and Internet technology in an online platform. The project also organized student competitions using online design tools.

**Current Status:**
The website for this project is not available for access and the review of the content is not done. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**

**Good Practices observed**
• Related to Content
  o A web-based interactive design tool with 3-d modeling support

• Related to Pedagogical and Learning
  o Helping schools which would have no resource on D&T
  o Curriculum design with a committee composed of teachers and professors were set up. It is good that the curriculum is amended with changing teaching strategies. Moreover, curriculum is designed in four levels to cater the learning diversity.
  o Utilization of available resources in CUHK. Sharing workshops
  o Student competitions helped to engage students.
26. Learning 2.0: an Online Platform and a Teacher Support Network for Curriculum and Assessment Innovation in Liberal Studies for the NSS Curriculum [2007/0313]

Project title:
Learning 2.0: an Online Platform and a Teacher Support Network for Curriculum and Assessment Innovation in Liberal Studies for the NSS Curriculum

Level:
Senior secondary

Subject/KLA:
Liberal study/LS

Target learners:
Secondary school students and teachers teaching LS

Project material:
http://ilap cite.hku.hk/ (login needed)
http://learn20 cite.hku.hk/index_tc.htm (project website for dissemination)

Project period:
2008 – 2011

Deliverables:
- Web-based enquiry learning and assessment system (iLap)
- Teacher’s guide for the website
- Server guide
- Modifiable and extendable instructional materials
- Rubrics, samples of work, classroom video and interviews for use by teachers and teacher educators
- Annual dissemination seminars in 2009 and 2010
- Project dissemination website

General description:
The project addressed the needs of local secondary schools to systematically manage, facilitate and assess enquiry-based learning for a large population of secondary school students. It takes a two pronged approach: the development of a web-based enquiry learning and assessment system and the setting up of a teacher professional network for curriculum and assessment innovation.

The former approach incorporates web 2.0 technologies to promote interaction and reflection and provides a way to manage a large volume of assignments and projects. As for the latter approach, a team of seconded teachers and a teaching
assistant/technician worked together to plan and design the curriculum, develop teaching and learning materials, and supports each other within the classroom.

Based on the report, the development procedure is good. Use prototyping approach to develop the system in order to support pedagogical innovation in the making: “in this project, a prototyping approach will be used so that the needs analysis help to define the infrastructural scope of the platform to allow for the flexible specification and modification of functionalities and applications by teachers as they develop and pilot implement and refine innovative practices in their classrooms.

Involve teachers as key collaborators in the design process which can meet the real-life needs and help build teacher network and expertise: the technology platform as well as the teacher network will be a valuable blended (integrated) infrastructure for the dissemination and scaling up of the innovation, hence addressing the issue of sustainability of the innovations, which is normally a most challenging one facing innovations in general

Seconded model: full time for project implementation and taking teaching responsibilities in school to implement the system with students

**Current Status:**
The website is not available for access and the review of the content is not done. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**

**Good Practices observed**

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - Good project is not only build good system but also build up learning community. In this project, it build teacher network for deepening and scaling up curriculum and pedagogical innovation in a sustainable way
• Related to Scalability
  o The system and associated materials will be flexible enough to be useful in other contexts than LS as well
  o The system is open source and can be extended and further developed by third parties after the completion of the project
  o The instructional materials can also be modified and extended by teachers.
  o Use free Web 2.0 technology, e.g. wiki to reduce cost. A standalone dissemination website to sustain the project and easy access for information and outcome packages. The teacher network established for this project will also be a very important human resource infrastructure to ensure the scalability and sustainability of the project outcomes.
  o School-university partnership to promote and support curriculum and pedagogical innovation: The centralized study and support is needed for any new initiatives like the one addressing in this project. As the outcome will benefit for a large population of secondary school students and individual school lacks the resources and ability to build up the expertise and capacity by itself, experts in local universities are in a better position to take the lead and organize large-scale teacher support and training
27. Supply Chain Center of Science and Technology Education (Tai Po & North District) [2008/0248]

Project title:
Supply Chain Center of Science and Technology Education (Tai Po & North District) [QEF 2008/0248]

Level:
Primary school

Subject/KLA:
Science and Technology in General Studies/GS, SE

Target learners:
Primary and secondary students

Project material:
Activity leaflet

Project period:
2010–2011

Deliverables:
The project had 2 sets of activities. One set is for secondary school students who were trained as science ambassadors. The second set was having different types of science projects for primary school students. There was a recognition scheme for student achievements.

General description:
Training of science and leadership knowledge was provided to secondary school students. These students became the trainers of servicing primary school students in a variety of projects (7 different topics). Each topic would involve the learning contact time of 3 hours in 2 sessions. This project was aimed to promote STEM, OLE opportunities, competition learning and collaborative networks between teachers/students in different districts.

Current Status:
The proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Robots
Summary:

Good Practices observed

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - Provide teacher training workshops related to general science materials
  - Peer teaching/sharing, having secondary students to train primary students. Specially design project topics to raise the interest/motivations of students. Established a honor scheme for the attainment of OLE
  - Encourage parent involvement as volunteers during activities
  - Inter-school competition to draw the interest from students

- Related to Scalability
  - Organized science investigation day
  - Student products exhibition to honor the achievements of students/teachers
28. A phonic interactive learning programme to lay a solid foundation for reading and self-learning for primary students [2008/0268]

**Project title:**
A phonic interactive learning programme to lay a solid foundation for reading and self-learning for primary students

**Level:**
Primary school

**Subject/KLA:**
English/ELE

**Target learners:**
Teachers/Parents – address learner diversity with multi-level and multi-sensory instructional technologies
Students – making them interested in learning and self-learning (from classroom to home)

**Project material:**
School-based phonetics courseware – www.fnfclub.hk

**Project period:**
2009-2010

**Deliverables:**
- Web-based platform

**General description:**
A phonics curriculum was developed in 2008 to integrate with school-based curriculum and classroom facilitation

**Current Status:**
The website is not available for access and the review of the contents is not done. At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML

**Summary:**

**Good Practices observed**
Remarks: Pedagogy seems sound in the report but cannot map it to any online resources and the focus is on self-learning.
29. Sense Kids Yearn (SKY): The Hong Kong Creative Digital Storytelling Project [2008/0326]

Project title:
Sense Kids Yearn (SKY): The Hong Kong Creative Digital Storytelling Project

Level:
Primary school

Subject/KLA:
English/ELE

Target learners:
Teachers – training workshops/teaching resources + Digital Storytelling Community
Students – develop English language ability through storytelling; writing; and encourage creativity

Project material:
DVD: The Hong Kong Creative Digital Storytelling Project + SKY website + Curriculum & Instructional Plans

Project period:
2009-2010

Deliverables:
DVD

General description:
A creative digital storytelling project designed to arouse students’ interest in learning and using English through activity-oriented activities.

Current Status:
For this project, the DVD has been found and the review of the content has been done. Yet, it needs to be updated from DVD format in project extensibility. Moreover, the proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Multimedia content
Summary:

**Good Practices observed**

- Related to Content
  - Some grammar notes are worth for reference and act as supplementary for teaching as well as for students’ self-study.
  - Most of the content is very basic and general. For a subject teacher, many materials cannot be used first hand. Teaching materials need to be tailor made for the class. Still, the idea of interpretation may give stimulation for the planning. The system is also quite easy to navigate.
  - Some PowerPoints are attractive as they have flashes with moving pictures. The background is also colourful and it suits primary students the most.
  - The system is quite systematic. It covers many aspects from friendship to animals to the nature. Moreover, it has many different text types ranging from format types (diary and email) to creativity (story generator).

- Related to Pedagogical and Learning
  - Each group of teachers is responsible for a certain of design, and different understandings and interpretations among the teachers may cause confusion and difference. However, it is a good practice that the system covers different theme tasks.
  - Focus on students’ creativity
  - The good practice of this system is that it encourages a collaborative learning environment for students. However, as suggested by the Teacher Advisor, teachers are busy and may not have the time to prepare the abundant work for a storytelling competition in reality.
  - The good practice is that smarter students self-learn and can trace their own pace and learn from trial and errors. But for low-achieving students, they would need further support.
  - For kids nowadays, the system may not be able to motivate and engage them. Compared with portable games, it lacks the zaps to stimulate their brain.

Project title:
Robotic New Era

Level:
Primary School

Subject/KLA:
General Studies/GS

Target learners:
Upper Primary School Students

Project material:
N/A

Project period:
2012 – 2013

Deliverables:
Curriculum, Workshops, Competitions

General description:
The project aimed to cultivate students’ technical skills, knowledge in mechanics, logical thinking and creativity through robot creation and programming.

Current Status:
The proposal and final report have been reviewed.

Information Technologies/Tools Applied:
Robots

Summary:
Good Practices observed

- Related to Pedagogical and Learning
  - All-rounded skills (hands-on, theories, logical thinking, and creativity)
  - The project fosters a sense of all-rounded development among the students, including logical thinking, collaboration and creativity.
  - Competitions and Group Projects provide opportunities to students to design and program robots with concerted effort.
  - The project provides an environment to students to develop their own skill sets.
31. Reading to Learn - A Path Directs to Brilliant Writing [2011/0080]

Project title:  
Reading to learn – a path directs to brilliant writing

Level:  
Primary school

Subject/KLA:  
English language learning/ELE

Target learners:  
660 P1-6 Primary school students in 23 classes  
Other beneficiaries: 12 English teachers, 1320 P1-6 parents

Project material:  
Project details and final report

Project period:  
2012 – 2013

Deliverables:  
- Interactive reading materials using iPad: e-storybooks with sounds, videos in class  
- Online writing platform (google doc)  
- Learning materials, including an integrated reading and writing curriculum, self-learning reading materials for brighter students at their leisure time (i.e. 12 self-learning materials), 72 story books and 60 reading and writing lessons

General description:  
The funding is mainly used to buy iPad. The school got eBooks ready for use.

Current Status:  
At present, only the proposal and final report are available and have been reviewed.

Information Technologies/Tools Applied:  
Multimedia content
Summary:

Good Practices observed

- Related to Content
  - Not applicable as the content is not observed.
  
  Based on the report review, the project has chosen a free and stable IT online platform for the writing component. This can easily be adopted by students without focusing a lot on how to use the IT and saves a lot of time on IT trouble-shooting.
  
  Moreover, good build-up of teacher/student/parent awareness and readiness to participate in the project as the stages are clear and there are necessary briefing sessions.

- Related to Pedagogical and Learning
  - By reviewing the final report, it seems that the project has very clear objectives and target group. It also designed learning materials and activities according pedagogical models. Help parents to understand what their children do and learn in the lessons: more efficient by online platform. Share the students’ writing with parents
  
  - Based on the report review, it is a good practice to pair up bright and slow students in collaborative writing. Moreover, students need to use the platform to write and comment. It is really utilizing the tools for the benefit of instant collaboration in language classroom.

- Related to Scalability
  - The practice can easily be transferred to other primary schools and secondary school.
  
  - The project will have the potential to benefit a huge number of students even after the project ended as the entire teaching programme will continue year after year.

  Multiple dissemination approaches:
  - project brochure for parents and fellow schools to share successful story
  - outcomes sharing: the writings produced by students
  - share project summary, outcomes and experiences on school’s website
32. Accelerating General Studies 2.0 AGS 2.0 [2011/0280]

Project title:
Accelerating General Studies 2.0 AGS 2.0 [QEF 2011/0280]

Level:
Primary school

Subject/KLA:
General Studies/GS

Target learners:
Upper primary students

Project material:
Website

Project period:
2013-2015

Deliverables:
A web-based application supports the learning of General Studies for P4-6 students. The materials cover 6 learning areas in the subject. The application allows students to set their own learning targets so that teachers can assess the learning progress and diversity of students. Then, teachers can adjust the teaching pace/materials for better student learning effectiveness.

General description:
The web application provides multimedia contents, including animation, cartoon, videos, interactive games, news and other learning information. The application is an extension of a previous QEF project (AGS). There are more than 200 learning units and 1000 questions, which cover the higher primary General Studies KS2 completely. The application also aims to improve the generic skills of students. This can help them to apply learned knowledge in other subjects. Individual progress report and ranking information are also provided to let students having better feedbacks and self-assessment in order to improve their learning. The user manual is not accessible as of June 12, 2016. (https://ase2 proj.hkedcity.net/assets/uploads/files/AGS_menu.pdf) . News section last updated is June 2, 2016.

Current Status:
The website of this project is available for access and the review of the contents has been done. Moreover, the proposal and final report have also been reviewed.
Information Technologies/Tools Applied:
Multimedia content, web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - Comprehensive materials with over 20 areas; the online platform has a number of exercises for students and they are in various forms: animation, data and references, comics, videos and interactive games. Moreover, there are various questions types: multiple-choice, fill in the blanks, true-false questions, matching questions, and short-answer questions.

- Related to Pedagogical and Learning
  - Provide self-learning tools/links
  - Web 2.0 platform, supporting teachers to create/assess topics, student interactions and Q&A channels among different schools
  - Collaborative learning among students is limited as the most attractive part to the students is the game section. However, the teaching sharing forum establish is a good practice as it enables problem solving of the application and sharing of materials. Also, the project team has collaborated with HKIEdu and EduCity for project development.
  - Feedbacks, self-reflection and students can learn in different paths

- Related to Scalability
  - Developed the generic skills of students
  - General Studies focuses on the building of knowledge and skills and the cultivation of a growth mindset. It is a good practice that the platform keeps track of the grades of students and using auto-marking. The analysis of learning data helps to understand the learning progress of students.
  - According to the report, the platform also aims to develop open-ended questions and short-answer questions to further cultivate students’ generic skills and knowledge building. However, the marking system of the open-ended questions and short-answer questions are not specified in the report, and it is not clear whether the platform can be further developed.
33. Learning Language Through Animation [2012/0046]

Project title:
Learning Language Through Animation 看動畫 學語文

Level:
Special School – Primary School

Subject/KLA:
Chinese/CLE

Target learners:
Special School Students

Project material:
http://www.plkylmf.edu.hk/Shares/elearning/study/B_201314/index.html

Project period:
2013 – 2015

Deliverables:
HTML, and Animations (Video)

General description:
The project has developed 18 animated storytelling movies. Each with a comprehension exercise in a form of multiple choice questions to test student understanding of the movie contents.

Current Status:
The website for this project is available for access and the review of the contents has been done. The proposal and final report have been reviewed as well.

Information Technologies/Tools Applied:
Multimedia content, web pages in HTML
Summary:

Good Practices observed

- Related to Content
  - The animation facilitates the learning process.

Remarks: On the functionality side, there is no progress monitoring facility
34. Building up a Community Network for Fostering Character Education  
[2012/0102]

**Project title:**
Building up a Community Network for Fostering Character Education  
建立良好品格的網絡社群

**Level:**
Secondary

**Subject/KLA:**
Integrated Humanities/PSHE

**Target learners:**
130 F2 secondary school students and as the deliverables are suitable for coming  
cohorts, all students in the school will benefit

**Project material:**

**Project period:**
2013 – 2014

**Deliverables:**
- Online platform  
- Learning package  
- Sharing session with parents

**General description:**
To foster character education, this project built up a community network via a  
school-based platform. Some school-based curricula were uploaded and “News  
Stories” had been used to facilitate interactions between students and teachers. The  
platform is more than a self-learning platform for students; it was used to facilitate  
teachers’ teaching as well. Moreover, the project aims to engage parents to participate  
in character education as well via the platform. However, this objective had not been  
fully fulfilled as the final report did not mention the engagement of parents in the  
platform.

**Current Status:**
The website is not available for access and the review of the contents cannot be done.  
At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Web pages in HTML
Summary:

**Good Practices observed**

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - By reviewing the final report, it seems that the project has very clear objectives and target group. It also designed learning materials and activities according pedagogical models. The school used technology, i.e. an online platform to strengthen the connection with parents.

- Related to Scalability
  - The experiences and learning materials built up during the project can be reused. Previous students’ work are kept and stored on the online platform and can be shared with other students. This is an important and useful way to build a learning community.
35. Digital Mobile Classroom [2012/0294]

**Project title:**
Digital Mobile Classroom [QEF 2012/0294]

**Level:**
Special Education

**Subject/KLA:**
OTH

**Target learners:**
Special primary and secondary students

**Project material:**
Website

**Project period:**
2013-2014

**Deliverables:**
An establishment of a digital mobile classroom was done via Wi-Fi infrastructure and using of tablets to support student learning. The classroom serves 4 different subjects, science, reading, language therapy, and autistic counseling.

**General description:**
The digital classroom conducts different types of activities to promote the learning effectiveness of special needed students. During the classes, students can immediate search information and conduct project-based work. They can use the tablets for querying and summarizing their works so as to improve their communication skills. Teachers have been trained on the related materials also to aid them in teaching their students.

**Current Status:**
At present, the proposal and final report have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content
Summary:

**Good Practices observed**

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - Teachers can co-develop materials together and have sharing sessions with students
  - Different learning modes for student diversity

- Related to Scalability
  - Provide an infrastructure for other subjects
36. Speech Therapy iPad Applications for Special School [2012/0340]

Project title:
Speech Therapy iPad Applications for Special School

Level:
Special School

Subject/KLA:
Speech Therapy (Cantonese)/OTH

Target learners:
Special School Students

Project material:
iPad apps (Links to apps: https://itunes.apple.com/us/developer/mary-rose-school/id916463367)

Project period:
2013 – 2015

Deliverables:
iPad Application

General description:
The project developed 3 Cantonese speech therapy iPad app as teaching tools.

Current Status:
iPad apps are available for download and the review of the content has been done.
Moreover, the project proposal and the final report have been reviewed as well.

Information Technologies/Tools Applied:
Multimedia content
Summary:

Good Practices observed

- Related to Content
  - The organization of the pictures is clear and vocabularies are divided in a number of categories which facilitate student learning.

- Related to Pedagogical and Learning
  - The system is well-designed for speech therapy which facilitates student learning of the pronunciation of Cantonese vocabularies. The application is able to enhance the learning experience of the students.
  - With therapists who are experts joining in the design, the system have been planned carefully to cater the needs.
  - Games are designed to fit individual needs and ability. Learner is able to record their own speech and plays it back to check the correctness of their pronunciation.

- Related to Scalability
  - Remark: The initialization of the App takes time and no tutorial is given for first-time user.

Project title:
Building Interactive Learning Environment of Chinese Language Learning for Non-Chinese Speaking Students

Level:
Secondary

Subject/KLA:
Chinese language learning/CLE

Target learners:
420 Non-Chinese speaking (NCS) students in the school

Project material:
Project details and final report

Project period:
2013 - 2015

Deliverables:
- School-based textbook and teaching materials (school-based adapted Chinese curriculum for NCS students)
- Innovative Chinese lessons for NCS students (using tablet computers, software, e-platform, integrate IT into the class, using online materials, create an interactive lesson)
- 3rd Putonghua Speech festival for non-Chinese speaking students
- Chinese language and culture immersion programme for NCS students
- Sharing session about the project

General description:
This is a good project which has specific target group and develops learning packages just fit for the learners as well as school needs. The project was conducted by YMCA of Hong Kong Christian College which is an English Medium school and has a very diverse multi-cultural student body. Over 70% students in YHKCC are international students from over 40 countries. The objective of this project is to fulfill the needs of providing better learning opportunities and environment for these NCS students. The project aims at building an interactive learning environment of Chinese language learning for NCS students by using IT and providing extra learning opportunities. The objectives include:
- To establish an innovative model of learning and teaching in Chinese language
To develop school-based adapted Chinese curriculum for NCS students
- To equip teachers and students to teach and learn Chinese in a more interactive, creative and interesting way by using information technology
- To enrich NCS students’ Chinese language learning experiences by organizing trip to Mainland China
- To create more learning opportunities for NCS students in Hong Kong by organizing inter-school activities
- To share successful experience of learning and teaching Chinese for NCS students to teachers and students in other schools offering adapted Chinese in Hong Kong

**Current Status:**
At present, only the project proposal and final report are available for access and they have been reviewed.

**Information Technologies/Tools Applied:**
Multimedia content

**Summary:**

**Good Practices observed**

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - By reviewing the final report, it seems that the project has very clear objectives and target group. It also designed learning materials and activities according to pedagogical models. A good practice is that instant feedbacks are provided to students. It is good that the project is needs-driven; it aims to solve real life problems, in this context, learning difficulties of NCS students. The project is also comprehensive as it integrate everything together: device, software, system, lesson plan, and curriculum design.
  - Based on the report, culture appreciation: activities like culture immersion trip and language festival are good not only for curriculum learning but also for whole-person development. Moreover, providing training sessions to teachers is another good practice. The school
provided training sessions to their teachers; organized a joint-school competition and provided sharing sessions to other schools.

- **Related to Scalability**
  - As the product is school-based curriculum of a language, it has high reusability. Good practice in sustainability; the experiences and learning materials built up during the project can be reused by other school having NCS students. However, the expense for holding the joint-school competition and study tour would be a problem.
  - The lesson plans and teaching and learning materials can be partly or fully adapted and modified.
  - The project could be continued to develop and implement the curriculum and teaching materials, as well as using the e-Learning resources in the Chinese lesson and other lessons, and for higher forms as well.
38. Design and Technology Extended Curriculum - Application of 3D Printer [2013/0095]

Project title:
Design and Technology Extended Curriculum - Application of 3D Printer [QEF 2013/0095]

Level:
Secondary school

Subject/KLA:
Design and Creativity/TE

Target learners:
Junior secondary students

Project material:
3D printer and related learning materials

Project period:
2014-2015

Deliverables:
The project acquired a 3D printer to support Design and Creativity subject for three forms of secondary school. There are 3 different design topics with respect to 3 different forms.

General description:
A multimedia website contains a large number of Chinese culture related materials presented in different formats. The website can support the teaching/learning for secondary schools in the Chinese language, Chinese history and Chinese culture subjects. Some updates up to April 2016.

Current Status:
At present, only the proposal and final report are available for access and they have been reviewed.

Information Technologies/Tools Applied:
3D printer
Summary:

Good Practices observed

- Related to Content
  - Not applicable as the content is not observed.

- Related to Pedagogical and Learning
  - Reverse engineering teaching
  - Students are exposed and used the most recent technology

- Related to Scalability
  - Can be extended to different subjects and inter-subject projects
Good Practices Extracted

The following 3 tables show the observed good practices extracted from the QEF and non-QEF projects review results with respect to the 3 areas of quality, i.e. content, pedagogy and learning, and scalability.

### Content

<table>
<thead>
<tr>
<th>Label</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>Comprehensive materials provided for the visual arts subject</td>
</tr>
<tr>
<td>C.2</td>
<td>Interactions of content materials through hyperlink support</td>
</tr>
<tr>
<td>C.3</td>
<td>Virtual reality is supported and with simple animations</td>
</tr>
<tr>
<td>C.4</td>
<td>Clear structure of the contents</td>
</tr>
<tr>
<td>C.5</td>
<td>The system is able to provide tools for students to study various aspects of Chinese characters</td>
</tr>
<tr>
<td>C.6</td>
<td>The tools are systemically arranged in the system and easily accessible by learners</td>
</tr>
<tr>
<td>C.7</td>
<td>Comprehensive materials available with 18 series and 200 topics</td>
</tr>
<tr>
<td>C.8</td>
<td>The website established is easily accessible. It is also well designed and easy to use. Moreover, some videos provide both Putonghua and Cantonese versions.</td>
</tr>
<tr>
<td>C.9</td>
<td>Engaging videos, colorful animations, and interactive quiz games related to Chinese history and culture are very attractive.</td>
</tr>
<tr>
<td>C.10</td>
<td>Clear structure of different contents; the website is well organized with 18 categories clearly defined and more than 200 topics covered.</td>
</tr>
<tr>
<td>C.11</td>
<td>Good to use panoramic photos to show the real situation along the trails and provide hotspot on different plants</td>
</tr>
<tr>
<td>C.12</td>
<td>An innovative integration of information technology (IT), botanical science, art (literary) and education</td>
</tr>
<tr>
<td>C.13</td>
<td>A simple interface for knowledge construction.</td>
</tr>
<tr>
<td>C.14</td>
<td>The Knowledge Forum established helped building a local school network. Teachers were able to build the necessary understanding and expertise to design knowledge building curricular that are suitable for their own students.</td>
</tr>
<tr>
<td>C.15</td>
<td>The system is based on the format of NewsML which matches the standard used by international new publishing organizations. The system is a comprehensive tool to support different aspects of a publisher. It is a good chance for students to learn about how a newspaper is made.</td>
</tr>
<tr>
<td>C.16</td>
<td>Simple web interface for easy traversal</td>
</tr>
<tr>
<td>C.17</td>
<td>It has a clear structure of different tools. Also, the system is well programmed with user manuals for different roles.</td>
</tr>
<tr>
<td>C.18</td>
<td>The teaching courseware is well structured and organized, including an introduction, objectives, procedures, assessment and evaluation. For some of the teaching courseware, there is a teachers’ discussion page.</td>
</tr>
<tr>
<td>C.19</td>
<td>Well utilization of multimedia technologies to present ideas. Some of the teaching courseware is well-designed and include graphs and colorful clip arts.</td>
</tr>
<tr>
<td>C.20</td>
<td>Three levels well designed for different purposes and objectives</td>
</tr>
<tr>
<td>C.21</td>
<td>Working with the English Language Learning unit of a local university</td>
</tr>
<tr>
<td>C.22</td>
<td>The instructions, learning materials and tools are well-organized and easily accessible by learners and teachers</td>
</tr>
<tr>
<td>C.23</td>
<td>The online platform provides suitable input methods for mathematical signs, formulas, graphs and innovation voice input</td>
</tr>
<tr>
<td>C.24</td>
<td>All learning materials are approved by experienced teachers to make sure the quality and suitability</td>
</tr>
<tr>
<td>C.25</td>
<td>Some grammar notes are worth for reference and act as supplementary for teaching as well as for students’ self-study.</td>
</tr>
<tr>
<td>C.26</td>
<td>For a subject teacher, many materials cannot be used first hand. Teaching materials need to be tailor made for the class. Yet, the idea of interpretation can provide stimulation for the planning. The system is also quite easy to navigate.</td>
</tr>
<tr>
<td>C.27</td>
<td>Some PowerPoints are attractive as they have flashes with moving pictures. The background is also colorful and it suits primary students the most.</td>
</tr>
<tr>
<td>C.28</td>
<td>The system is quite systematic. It covers many aspects from friendship to animals to the nature. Moreover, it has many different text types ranging from format types (diary and email) to creativity (story generator).</td>
</tr>
<tr>
<td>C.29</td>
<td>The project has chosen a free and stable IT online platform for the writing component. This can easily be adopted by students without focusing a lot on how to use the IT and saves a lot of time on IT trouble-shooting.</td>
</tr>
<tr>
<td>C.30</td>
<td>It is good to build up teacher/student/parent awareness and readiness through their participation in the project. The stages are clear and there are necessary briefing sessions.</td>
</tr>
<tr>
<td>C.31</td>
<td>Comprehensive materials in over 20 areas are available. The online platform has a number of exercises for students to do, and they are in various forms: animation, data and references, comics, videos and interactive games.</td>
</tr>
</tbody>
</table>
In the platform, there are various questions types: multiple-choice, fill in the blanks, true-false questions, matching questions, and short-answer questions.

The animation facilitates the learning process and makes students more engaging.

The organization of the pictures is clear and vocabularies are divided in a number of categories which facilitate student learning.

The system is well-designed for speech therapy which facilitates student learning of the pronunciation of Cantonese vocabularies. The application is able to enhance the learning experience of the students. With therapists who are experts joining in the design, the system have been planned carefully to cater the needs.

Games are designed to fit individual needs and ability. A learner is able to record their own speech and plays it back to check the correctness of their pronunciation.

### Pedagogy and Learning

<table>
<thead>
<tr>
<th>Label</th>
<th>Good Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.1</td>
<td>The approach of learning-on-demand is used to support different learning pace and diversity.</td>
</tr>
<tr>
<td>P.2</td>
<td>Students studied with parents’ participation and encouragement.</td>
</tr>
<tr>
<td>P.3</td>
<td>Scenario-based materials were created for better learning effectiveness</td>
</tr>
<tr>
<td>P.4</td>
<td>Multi-level learning is suggested for supporting student diversity.</td>
</tr>
<tr>
<td>P.5</td>
<td>Well use of multimedia</td>
</tr>
<tr>
<td>P.6</td>
<td>Parents are involved to test and provide comments on the platform.</td>
</tr>
<tr>
<td>P.7</td>
<td>Teachers can share and discuss among peers.</td>
</tr>
<tr>
<td>P.8</td>
<td>The platform is supported by an external collaborator: Hong Kong Productivity Council.</td>
</tr>
<tr>
<td>P.9</td>
<td>Students’ collaborated assignment with a foreign school (New Jersey, USA) in a video conference and then worked on assignments.</td>
</tr>
<tr>
<td>P.10</td>
<td>Math games were used to promote students’ interest in learning Math.</td>
</tr>
<tr>
<td>P.11</td>
<td>Interactive revision exercises were created for student self-learning.</td>
</tr>
<tr>
<td>P.12</td>
<td>Multi-channels of learning were provided in order to motivate students for learning Math.</td>
</tr>
<tr>
<td>P.13</td>
<td>Self-learning ability of students was promoted in the project.</td>
</tr>
<tr>
<td>P.14</td>
<td>Teachers discussed the teaching and learning materials with colleagues for professional training.</td>
</tr>
</tbody>
</table>
Scenario-based learning were adopted for better learning effectiveness, guiding students to overcome abstract concepts.

Teachers co-designed and co-developed the materials.

Math games were used to promote students’ interest in Math. Interactive revision exercises were created for student self-learning.

It’s beneficial to involve university students (UG and PG) in e-Learning projects. The benefits are two-fold. For university students, participation encourages the sense of responsibility and encouraging them to further study their subject-related materials. During the work in their projects, online support can be maintained where student helpers are available to help.

It’s a good practice to not only deliver training programs to teachers but also build up learning community among all participant teachers to share experience and summarize/consolidate valuable resources and practices into tangible deliverables (i.e. CD in this projects)

Formation of editorial board from schools and Hong Kong Visual Arts Network. Teachers were involved in the project with different capacity.

The project focuses on the study of in-depth knowledge of Chinese character.

A concise design of the user interface was created in the exercise sections.

Examples of teaching materials and exercises are available.

Sufficient training and support were provided to teachers and students when initiating new learning approaches, leading to a better implementation and output and fulfilling the expectation.

A "teaching compass" was provided to aid teachers and students on the use of the materials. Students can do a self-reflection, supporting critical thinking and self-learning.

A quality assurance mechanism of teachers and education stakeholders was set up via survey and evaluation forms. A Facebook link is available.

The website can stimulate self-learning, as there are “Reflection corner”, “Site-map” and “Pedagogy and Learning Guide” for users’ reference.

Materials were consulted with different stakeholders

The objective is fulfilled by providing a collaborative platform for teachers.

The system provides a collaborative platform for teachers to create, manipulate, store and share teaching materials online.

There were over 100 students were involved in the project. They were responsible for identifying and taking photos of the plants in the sites or along the trials. During the work, teachers coached them in preparing
<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.32</td>
<td>Texts and picture were used together to introduce plants.</td>
</tr>
<tr>
<td>P.33</td>
<td>To promote life-long learning by supporting students to create new knowledge units.</td>
</tr>
<tr>
<td>P.34</td>
<td>Students co-created learning materials, supporting peer learning.</td>
</tr>
<tr>
<td>P.35</td>
<td>Sharing/discussions among students and teachers are encouraged.</td>
</tr>
<tr>
<td>P.36</td>
<td>The goal-oriented activities/competitions organized in this project helped to motivate and engage learners to participate.</td>
</tr>
<tr>
<td>P.37</td>
<td>Awareness of social events and community is encouraged.</td>
</tr>
<tr>
<td>P.38</td>
<td>The use of IT was encouraged for collaborative editing.</td>
</tr>
<tr>
<td>P.39</td>
<td>Teamwork was encouraged and interpersonal skills are improved for students to use different media available in the system to share and publish newsletters in a team. Moreover, with discussion and group work, students were able to express ideas and content through using different types of media.</td>
</tr>
<tr>
<td>P.40</td>
<td>The system helps to maximize students’ creativity to release their newsletters.</td>
</tr>
<tr>
<td>P.41</td>
<td>A research center in a local university encourages collaboration between teachers and students by providing training camp to teachers and students, organizing a joint-school competition and sharing talks to other schools.</td>
</tr>
<tr>
<td>P.42</td>
<td>The system provides comprehensive and well-developed learning tools for a variety of KLAs.</td>
</tr>
<tr>
<td>P.43</td>
<td>The Flash courseware is provided in association with well-defined teaching plan for each topic.</td>
</tr>
<tr>
<td>P.44</td>
<td>The learning tools make good use of multimedia technologies to motivate student learning. Some of the courseware are very attractive with voice clips provided (English and Chinese).</td>
</tr>
<tr>
<td>P.45</td>
<td>The lesson plan is well structured. With the student evaluation included in the teaching courseware, teachers and the school are able to collect feedback for learning.</td>
</tr>
<tr>
<td>P.46</td>
<td>In 2003, in terms of the design and technology, some of the courseware is well-designed and attractive; there is a large variety of assignments for students such as drag-and-drop questions and fill-in-the-blank questions. These help to motivate and engage students in participating in class and learning.</td>
</tr>
<tr>
<td>P.47</td>
<td>The project has very clear objectives and target group.</td>
</tr>
<tr>
<td>Page</td>
<td>Text</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>P.48</td>
<td>Team work/group work are emphasized in the learning process in field studies.</td>
</tr>
<tr>
<td>P.49</td>
<td>Use real-life examples and materials to engage students.</td>
</tr>
<tr>
<td>P.50</td>
<td>Two schools worked closely in the project.</td>
</tr>
<tr>
<td>P.51</td>
<td>It also has designed learning materials and activities according pedagogical models. Moreover, the idea of having a question bank is good, such as providing past paper questions for students’ reference.</td>
</tr>
<tr>
<td>P.52</td>
<td>The development of online learning materials also provides professional development for teachers.</td>
</tr>
<tr>
<td>P.53</td>
<td>The online platform enhances the collaboration, sharing among students.</td>
</tr>
<tr>
<td>P.54</td>
<td>Rich, multi-sensory or multimedia instructional material is a lasting and impactful way of conducting a lesson and engaging the students.</td>
</tr>
<tr>
<td>P.55</td>
<td>The project collaborated with a school in mainland China.</td>
</tr>
<tr>
<td>P.56</td>
<td>Curriculum design with a committee composed of teachers and professors were set up. It is good that the curriculum is amended with changing teaching strategies. Moreover, curriculum is designed in four levels to cater the learning diversity.</td>
</tr>
<tr>
<td>P.57</td>
<td>Available resources in a local university were utilized with sharing workshops organized.</td>
</tr>
<tr>
<td>P.58</td>
<td>Student competitions helped to engage students.</td>
</tr>
<tr>
<td>P.59</td>
<td>Good project is not only build good system but also build up learning community. In this project, the collaborative system helped to build a teacher network for deepening and scaling up curriculum and pedagogical innovation.</td>
</tr>
<tr>
<td>P.60</td>
<td>Teacher training workshops were provided related to general science materials.</td>
</tr>
<tr>
<td>P.61</td>
<td>There are peer teaching/sharing, and secondary students also participated to train primary students.</td>
</tr>
<tr>
<td>P.62</td>
<td>Specially design project topics were suggested to raise the interest/motivations of students.</td>
</tr>
<tr>
<td>P.63</td>
<td>An honor scheme was established for the attainment of OLE.</td>
</tr>
<tr>
<td>P.64</td>
<td>Parents' involvement as volunteers was encouraged during activities.</td>
</tr>
<tr>
<td>P.65</td>
<td>Inter-school competition was organized to draw the interest from students.</td>
</tr>
<tr>
<td>P.66</td>
<td>It is a good practice that the system covers different theme tasks.</td>
</tr>
<tr>
<td>P.67</td>
<td>It encourages a collaborative learning environment for students.</td>
</tr>
<tr>
<td>Page</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>P.68</td>
<td>The good practice is that more materials are provided and smarter students can self-learn and trace their own pace and learn from trial and errors.</td>
</tr>
<tr>
<td>P.69</td>
<td>The project fosters a sense of all-rounded development among the students, including logical thinking, collaboration and creativity.</td>
</tr>
<tr>
<td>P.70</td>
<td>Competitions and group projects provide opportunities to students to design and program robots with concerted effort.</td>
</tr>
<tr>
<td>P.71</td>
<td>The project provides an environment to students to develop their own skill sets.</td>
</tr>
<tr>
<td>P.72</td>
<td>The project helps parents to understand what their children do and learn in the lessons. It is more efficient with the online platform, e.g. students’ writing can be shared with parents.</td>
</tr>
<tr>
<td>P.73</td>
<td>It is a good practice to pair up bright and slow students in collaborative writing. Moreover, students need to use the platform to write and comment on each other’s work. It is really utilizing the tools for the benefit of instant collaboration in language classroom.</td>
</tr>
<tr>
<td>P.74</td>
<td>A Web 2.0 platform was developed, supporting teachers to create/assess topics, student interactions, with Q&amp;A channels among different schools.</td>
</tr>
<tr>
<td>P.75</td>
<td>The teaching sharing forum enabled problem solving of the application and sharing of materials. Also, the project team has collaborated with a local university and HKEdCity for project development.</td>
</tr>
<tr>
<td>P.76</td>
<td>Feedbacks, self-reflection and students can learn in different paths.</td>
</tr>
<tr>
<td>P.77</td>
<td>The school used technology, i.e. an online platform to strengthen the connection with parents and provides easy access to parent to understand what their children do and learn in the lessons.</td>
</tr>
<tr>
<td>P.78</td>
<td>A good practice is that instant feedbacks are provided to students.</td>
</tr>
<tr>
<td>P.79</td>
<td>The project was comprehensive as it had integrated everything together: device, software, system, lesson plan, and curriculum design.</td>
</tr>
<tr>
<td>P.80</td>
<td>Providing training sessions to teachers is another good practice. The school provided training sessions to their teachers; organized a joint-school competition and provided sharing sessions to other schools.</td>
</tr>
</tbody>
</table>

**Scalability**

<table>
<thead>
<tr>
<th>Label</th>
<th>Good Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.1</td>
<td>A control group was used to assess the difference after using the package (Primary 2 AM class vs Primary 2 PM class).</td>
</tr>
<tr>
<td>S.2</td>
<td>Materials are available to the public.</td>
</tr>
<tr>
<td>S.3</td>
<td>The project can benefit all primary school students in Hong Kong. Use systematic evaluation method so that project outcomes can be sound for research publications. This project has several publications in local conferences.</td>
</tr>
<tr>
<td>S.4</td>
<td>A concise design of the user interface in the exercise sections.</td>
</tr>
<tr>
<td>S.5</td>
<td>One centralized website to store all, e.g. learning materials, students projects, news, stakeholder information, events, useful links etc.</td>
</tr>
<tr>
<td>S.6</td>
<td>The outcomes were publicized to benefit more people via e-Zone, Ming Pao, ATV all reported the project, demonstration in public events, alumni day of a local university, QEF project exposition, presentation and demonstration of the virtual sites and trails in international conferences, electronic greeting cards to local and overseas receivers, and the website is searchable by search engines and linked by international websites.</td>
</tr>
<tr>
<td>S.7</td>
<td>The KF tool and activities can be used to support many subjects.</td>
</tr>
<tr>
<td>S.8</td>
<td>Teachers could adjust and tailor for the learning ability of their students and develop their own tailor-made task sheets and learning and teaching materials.</td>
</tr>
<tr>
<td>S.9</td>
<td>It is a good maintenance to upload all materials in a centralized repository.</td>
</tr>
<tr>
<td>S.10</td>
<td>The project not only include the production of materials, but also organize sharing, training, professional development opportunities for teachers to equip them with better knowledge/competence and alleviate their anxiety because of curriculum change.</td>
</tr>
<tr>
<td>S.11</td>
<td>The project includes the organization and participation in forums, symposiums, and conferences.</td>
</tr>
<tr>
<td>S.12</td>
<td>All students can make use of the online platform and access question banks and self-learn. The auto-marking function of the platform is a good practice as students can immediately know the result and keep track of their learning process.</td>
</tr>
<tr>
<td>S.13</td>
<td>The same online platform can be set up for different subjects.</td>
</tr>
<tr>
<td>S.14</td>
<td>The experiences and learning materials built up during the project can be reused.</td>
</tr>
<tr>
<td>S.15</td>
<td>The project has a good evaluation approach by studying the correlation of the use of the platform and students’ academic improvements.</td>
</tr>
<tr>
<td>S.16</td>
<td>It has chosen the most up-to-date technology of implementing email, interactive web platform for extending learning from classroom setting to students’ home.</td>
</tr>
<tr>
<td>S.17</td>
<td>The project results have been disseminated through teacher sharing workshop.</td>
</tr>
<tr>
<td>S.18</td>
<td>The system and associated materials will be flexible enough to be useful in other contexts than Liberal Studies as well</td>
</tr>
<tr>
<td>S.19</td>
<td>The system is open source and can be extended and further developed by third parties after the completion of the project. The instructional materials can also be modified and extended by teachers.</td>
</tr>
<tr>
<td>S.20</td>
<td>The project has used the free Web 2.0 technology, e.g. wiki to reduce cost.</td>
</tr>
<tr>
<td>S.21</td>
<td>A standalone dissemination website to sustain the project and easy access for information and outcome packages</td>
</tr>
<tr>
<td>S.22</td>
<td>The teacher network established for this project will also be a very important human resource infrastructure to ensure the scalability and sustainability of the project outcomes.</td>
</tr>
<tr>
<td>S.23</td>
<td>The project includes a school-university partnership which provides centralized support, and this helps to promote and support curriculum and pedagogical innovation. As individual school lacks the resources and ability to build up the expertise and capacity by itself, experts in local universities are in a better position to take the lead and organize large-scale teacher support and training.</td>
</tr>
<tr>
<td>S.24</td>
<td>Student products exhibition was organized to honor the achievements of students/teachers</td>
</tr>
<tr>
<td>S.25</td>
<td>The project will have the potential to benefit a huge number of students even after the project ended as the entire teaching programme will continue year after year using multiple dissemination approaches, e.g. project brochure for parents and fellow schools to share successful story, outcomes sharing: the writings produced by students, share project summary, outcomes and experiences on school’s website</td>
</tr>
<tr>
<td>S.26</td>
<td>It is a good practice that the platform keeps track of the grades of students and using auto-marking. The analysis of learning data helps to understand the learning progress of students.</td>
</tr>
<tr>
<td>S.27</td>
<td>Previous students’ work are kept and stored on the online platform and can be shared with other students. This is an important and useful way to build a learning community.</td>
</tr>
<tr>
<td>S.28</td>
<td>Teachers can co-develop materials together and have sharing sessions with students.</td>
</tr>
<tr>
<td>S.29</td>
<td>As the product is school-based curriculum of a language, it has high reusability. Good practice in sustainability; the experiences and learning materials built up during the project can be reused by other school having NCS students.</td>
</tr>
<tr>
<td>S.30</td>
<td>The lesson plans and teaching and learning materials can be partly or fully</td>
</tr>
</tbody>
</table>
adapted and modified.

The project could be continued to develop and implement the curriculum and teaching materials, as well as using the e-Learning resources in the Chinese lesson and other lessons, and for higher forms as well.
Appendix B - CoE Documents Review Report and Good Practices Extracted

Centre of Excellence (CoE) Scheme Documents Review for Consolidation and Redevelopment Work on IT in Education

Prepared by:
Project Team (PM: Vincent Ng)
Department of Computing
The Hong Kong Polytechnic University
Aug 2016
Centre of Excellence Scheme (CoE) Projects Review:

1. CoE school (Primary sector): .................................................130
   a. Document review of the CoE support ..................................130
   b. Document review of the CoE support ..................................133

2. CoE school (Secondary sector): ........................................136
   a. Document review of the CoE support ...............................136
   b. Document review of the CoE support ...............................138

3. CoE school (Secondary sector): ........................................140
   a. Document review of the CoE support ...............................140
   b. Document review of the CoE support ...............................142

4. CoE school (Primary sector): .............................................144
   a. Document review of the CoE support ...............................144

5. CoE school (Secondary sector): ........................................146
   a. Document review of the CoE support ...............................146
   b. Document review of the CoE support ...............................148

6. CoE school (Primary sector): .............................................150
   a. Document review of the CoE support ...............................150
   b. Document review of the CoE support ...............................152

7. CoE school (Primary sector): .............................................154
   a. Document review of the CoE support ...............................154
   b. Document review of the CoE support ...............................156

8. CoE school (Secondary sector): ........................................158
   a. Document review of the CoE support ...............................158
   b. Document review of the CoE support ...............................161

9. CoE school (Primary sector): .............................................163
   a. Document review of the CoE support ...............................163
   b. Document review of the CoE support ...............................165

10. CoE school (Primary sector): ...........................................167
    a. Document review of the CoE support ..............................167

11. CoE school (Primary sector): ..........................................169
    a. Document review of the CoE support ..............................169
    b. Document review of the CoE support ..............................171

12. CoE school (Special School sector): ...............................173
    a. Document review of the CoE support ..............................173
    b. Document review of the CoE support ..............................175
1. CoE school (Primary sector) -
   a. Document review of the CoE support

**Topic:**

資訊科技學與教面面觀

**Level:**

Primary

**Subject:**

Chinese, English, Mathematics, Visual Art, Music

**Date:**

17-05-2016

**Aim:**

1. To introduce how to use tablet computer Apps to facilitate classroom learning and teaching.
2. To introduce how to use build-in functions of tablet computers to facilitate learning and teaching.
3. To introduce how to use Learning Management System (LMS) / Cloud Services.
4. To share experience for curriculum planning on e-Learning.
**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

### C1: Content

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3  2  1  Contents are tailor-made to the school context and teachers from the supported school</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3  2  1  Elaborate how e-Learning can be applied in various scope, include school-level, subject-level and class-level.</td>
</tr>
</tbody>
</table>

Final:

### C2: Pedagogy and Learning

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3  2  1  Examples of adaptation of IT technologies in various disciplines are given.</td>
</tr>
<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3  2  1  The pedagogical theories that supports e-Learning are elaborated.</td>
</tr>
<tr>
<td>3</td>
<td>Communication and media</td>
<td>4</td>
<td>3  2  1  The presentation slides are very informative.</td>
</tr>
<tr>
<td>4</td>
<td>Cognitive skill level</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>5</td>
<td>Collaboration</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>6</td>
<td>Personalization</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>7</td>
<td>Motivation and engagement</td>
<td>4</td>
<td>3  2  1  Step-by-step guidelines of using mobile apps are clearly presented which enhance trainees’ motivation</td>
</tr>
</tbody>
</table>
and engagement.

Final:

C3: Scalability

<table>
<thead>
<tr>
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<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4 3 2 1</td>
<td>The workshop can be delivered to other primary school teachers with similar situation with only minor adjustments.</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4 3 2 1</td>
<td>The e-Learning tools can be adopted in various disciplines.</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4 3 2 1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

Final:

Remarks:

2. The CoE teacher gives a detailed report on her observation on the school situation in e-Learning and suggestions on supports in the future.
3. Too much apps introduced within a single session.
b. Document review of the CoE support

Topic:
 資訊科技教學的課程規劃

Level:
 Primary

Subject:
 Chinese, English, Mathematics, Visual Art, Music

Date:
 22-03-2016

Aim:

1. To introduce the process of transiting from traditional learning to e-Learning.
2. To introduce how to use tablet computer Apps to facilitate classroom learning and teaching.
**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

**C1: Content**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
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</tr>
</thead>
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**C2: Pedagogy and Learning**

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<td>4</td>
<td>Cognitive skill level</td>
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### C3: Scalability

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<td></td>
<td></td>
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<td>3 2 1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>The e-Learning tools can be adopted in various disciplines.</td>
</tr>
<tr>
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<td>Extensibility</td>
<td>4</td>
<td>3 2 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

### Remarks:

2. The CoE teacher gives a detailed report on her observation on the school situation in e-Learning and suggestions on supports in the future.
3. Too much Apps introduced in a single session.
2. CoE school (Secondary sector):
   a. Document review of the CoE support

   **Topic:**
   翻轉課堂經驗分享

   **Level:**
   Secondary

   **Subject:**
   Mathematics (Example)

   **Date:**
   07-10-2015

   **Aim:**
   To introduce flipped classroom and how the App, Explain Everything and Schoology, can be adopted.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

<table>
<thead>
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<td>3 2 1 N/A</td>
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<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 A clear presentation of the definition on flipped classroom with well-depicted examples.</td>
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<tr>
<td>4</td>
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**Final:**

<table>
<thead>
<tr>
<th>C2</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1 The apps and software introduced facilitate collaboration among teachers and students in</td>
</tr>
</tbody>
</table>
### The Flipped Classroom Approach

The rationale of using flipped classroom is elaborated.

### Communication and Media

The representation slides are concise and informative.

### Cognitive Skill Level

N/A

### Collaboration

N/A

### Personalization

N/A

### Motivation and Engagement

N/A

### C3: Scalability

<table>
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<th>Good Practice</th>
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<tr>
<td>1</td>
<td>Student</td>
<td>4 3 2 1</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other student levels.</td>
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<td>Extensibility</td>
<td>4 3 2 1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

**Remarks:**
- Apps introduced: Explain everything and Schoology
b. Document review of the CoE support

**Topic:**
Basic iPad Apps and Flipping Classroom

**Level:**
Secondary

**Subject:**
N/A

**Date:**
08-06-2016

**Aim:**
1. To introduce the motivation of flipped classroom.
2. To introduce the application of tablet apps to facilitate teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

<table>
<thead>
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The flipped classroom approach

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<th>2</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Communication and media</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>The representation slides are informative.</td>
</tr>
<tr>
<td>Cognitive skill level</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
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<td>4</td>
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<td>2</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Final:

**C3: Scalability**

<table>
<thead>
<tr>
<th>Indicator</th>
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<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>4</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other student levels.</td>
</tr>
<tr>
<td>Discipline</td>
<td>4</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other disciplines.</td>
</tr>
<tr>
<td>Extensibility</td>
<td>4</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

Final:

**Remarks:**

1. Apps and software introduced: Socrative, Skitch, I-nigma, QR code, Edmodo, moodle, Audio Note, Dragon Dictation, Keynote, Padlet, Popplet, Explain Everything, and Go eLearning
2. Too much tools introduced in a single session.
3. CoE school (Secondary sector)
a. Document review of the CoE support

**Topic:**
運用平板電腦應用程式促進學與教

**Level:**
Secondary

**Subject:**
English and Chinese History

**Date:**
29-04-2016

**Aim:**
1. To introduce the application of tablet apps to facilitate teaching and learning.
2. To introduce flipped classroom.

**Evaluation** (A 4-point scale: from 1 is the *lowest* to 4 is the *highest*)

**C1: Content**

<table>
<thead>
<tr>
<th>C1</th>
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</tr>
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<td>3 2 1 N/A</td>
</tr>
<tr>
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<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1 The importance of e-Learning is emphasized at the beginning and case studies are provided to evaluate the effectiveness of Flipped classroom.</td>
</tr>
</tbody>
</table>

**Final:**

---

**C2: Pedagogy and Learning**

<table>
<thead>
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</tr>
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<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1 The apps introduced facilitate collaboration</td>
</tr>
</tbody>
</table>
among teachers and students in the T&L process.

<table>
<thead>
<tr>
<th></th>
<th>Pedagogical design models</th>
<th>4</th>
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<tr>
<td>3</td>
<td>Communication and media</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<td>The representation slides are concise and informative.</td>
</tr>
<tr>
<td>4</td>
<td>Cognitive skill level</td>
<td>4</td>
<td>3</td>
<td>2</td>
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Final:

**C3: Scalability**

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<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
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Final:

**Remarks:**

Apps introduced: Mindomo, Skitch, Padlet, Plickers, NearPod, and Edmodo
b. Document review of the CoE support

**Topic:**
運用平板電腦應用程式及學習管理系統(LMS)促進學與教

**Level:**
Secondary

**Subject:**
Math, Science, and Arts

**Date:**
07-07-2016

**Aim:**
To introduce the application of tablet apps and learning management system to facilitate teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

**C1: Content**

<table>
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<td>1</td>
<td>Functionality</td>
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<tr>
<td>2</td>
<td>Usability</td>
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<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3</td>
</tr>
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Final:

**C2: Pedagogy and Learning**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
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<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>C1</td>
<td>Indicator</td>
<td>Rank</td>
<td>C2</td>
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<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
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<td>3</td>
<td>Communication and media</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Cognitive skill level</td>
<td>4</td>
<td>3</td>
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<td>5</td>
<td>Collaboration</td>
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<td>6</td>
<td>Personalization</td>
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<td>7</td>
<td>Motivation and engagement</td>
<td>4</td>
<td>3</td>
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<td>Final:</td>
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<td></td>
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**C3: Scalability**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>C2</th>
<th>Rank</th>
<th>C3</th>
<th>Rank</th>
<th>Good practice</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other student levels.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3</td>
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<td>1</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other disciplines.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
<td></td>
</tr>
</tbody>
</table>

**Final:**

**Remarks:**

It is recommended that a list of App is provided to the teachers for their preparation before the workshop.
4. CoE school (Primary sector)-
a. Document review of the CoE support

**Topic:**
在小學課程中推動電子學習工作坊 E-Learning Workshop (PRIMARY)

**Level:**
Primary

**Subject:**
Chinese, English, Mathematics and General Studies

**Date:**
01-04-2016

**Aim:**
To introduce the transition of traditional teaching and learning to the adoption of IT in T&L.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

**C1: Content**

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</tr>
</thead>
<tbody>
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<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1</td>
</tr>
</tbody>
</table>

The requirement of e-Learning is first introduced (E.g., hardware and human resources). Then, concrete examples of using IT for various disciplines are introduced.

**Final:**

**C2: Pedagogy and Learning**

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</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3 2 1 The TPACK model is introduced.</td>
</tr>
</tbody>
</table>
### Communication and media

<table>
<thead>
<tr>
<th>Rank</th>
<th>The presentation slides are informative.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
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</tbody>
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### Cognitive skill level

<table>
<thead>
<tr>
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<tbody>
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### Collaboration

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<tr>
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### Personalization

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<tbody>
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### Motivation and engagement

<table>
<thead>
<tr>
<th>Rank</th>
<th>Separated workshop sessions are offered for more hand-on practices for teachers.</th>
</tr>
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<tbody>
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<td>4</td>
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<tbody>
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<td>1</td>
<td>Student</td>
<td>4</td>
<td>The concepts introduced, e.g., flipped classroom, can be adopted universally.</td>
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<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

| 2  | Discipline | 4    | Separated workshop sessions are offered for more hand-on practices for teachers. |
|    | 3         | 2    | 1 |

| 3  | Extensibility | 4    | The workshop can be delivered in other schools with similar situation with only minor adjustments. |
|    | 3         | 2    | 1 |

### Remarks:

Apps introduced: Kahoot, and Nearpod
5. CoE school (Secondary sector)
   a. Document review of the CoE support

**Topic:**
使用手提裝置及 Google Apps For Education 提升學與教效能

**Level:**
Secondary

**Subject:**
General Studies, Science, Technology, Visual Art

**Date:**
10-06-2016

**Aim:**
1. To introduce the application of tablet/mobile apps to facilitate teaching and learning.
2. To introduce the application of VR and screen mirroring.
3. To introduce Google Apps for Educations.

**Evaluation** *(A 4-point scale: from 1 is the lowest to 4 is the highest)*

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</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3 2 1 IT technologies are introduced (E.g., VR and screen mirroring) and how these technologies facilitated teaching and learning.</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1 Various ways of e-Learning is introduced with concrete scenarios, steps and cost. The pros and cons are explicitly specified.</td>
</tr>
</tbody>
</table>

**C2: Pedagogy and Learning**
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target</td>
<td>4</td>
<td>The way of building up an e-Learning teaching team is introduced.</td>
</tr>
<tr>
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<td>groups</td>
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**C3: Scalability**

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<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>student levels.</td>
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<td>Discipline</td>
<td>4</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other</td>
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<td>disciplines.</td>
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<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>The workshop can be delivered in other schools with similar situation with</td>
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<td>only minor adjustments.</td>
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**Final:**

**Remarks:**

1. Apps introduced: 4D Anatomy, Photo Math, Kahoot, Padlet, Plickers, Edpuzzle, Quizlet and, Google Doc, Form, Slide, and Drive
2. Some teachers reflected that the session was too short for overwhelming tools and concepts.
b. Document review of the CoE support

**Topic:**
使用手提裝置提升學與教效能

**Level:**
Secondary

**Subject:**
General Studies, Science, Technology, Visual Art

**Date:**
20-05-2016

**Aim:**

1. To introduce the application of tablet/mobile apps to facilitate teaching and learning.
2. To introduce the application of VR and screen mirroring.
3. To introduce Google Apps for Educations.

**Evaluation** (A 4-point scale: from 1 is the *lowest* to 4 is the *highest*)

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**Final:**

C2: Pedagogy and Learning

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</table>
### Objectives and target groups

The way of building up an e-Learning teaching team is introduced.

### Pedagogical design models

N/A

### Communication and media

The representation slides are informative.

### Cognitive skill level

N/A

### Collaboration

N/A

### Personalization

N/A

### Motivation and engagement

N/A

### C3: Scalability

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<td>The concepts introduced, e.g., flipped classroom, can be extended to other disciplines.</td>
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<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
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**Remarks:**

Apps introduced: 4D Anatomy, Photo Math, Bitstrips, Kahoot, Padlet, Plickers, Edpuzzle, Youtube and, Google Doc, Form, Slide, and Drive
6. CoE school (Primary sector)
a. Document review of the CoE support

**Topic:**
資訊科技教育活動及資優活動

**Level:**
Primary

**Subject:**
Math and Visual Art

**Date:**
26-02-2016

**Aim:**
1. To provide class visit.
2. To inspect IT facilities and equipment.
3. To share experiences on adopting IT in teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

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</table>
it aligns with The Fourth Strategy on IT in Education.

<table>
<thead>
<tr>
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<th></th>
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<tr>
<td>3</td>
<td>Cognitive skill level</td>
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<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>Class visit can be extended to other classes.</td>
</tr>
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<td>3</td>
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<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
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**Remarks:**
The CoE teacher gives a detailed report on her observation on the school situation in e-Learning and suggestions on supports in the future.
b. Document review of the CoE support

**Topic:** 移動學習於學教的應用  
**Level:** Primary  
**Subject:** Math and General Studies  
**Date:** 19-05-2016

**Aim:**
1. To introduce Google Classroom.  
2. To share experiences on adopting of IT in teaching and learning.

**Evaluation** *(A 4-point scale: from 1 is the *lowest* to 4 is the *highest)*

### C1: Content

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**Final:**

### C2: Pedagogy and Learning

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<td>4</td>
<td>Cognitive skill level</td>
<td>4</td>
<td>3</td>
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<tr>
<td>5</td>
<td>Collaboration</td>
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<td>3</td>
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<tr>
<td>6</td>
<td>Personalization</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Motivation and engagement</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
### C3: Scalability

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Final:**

**Remarks:**

1. Software introduced: Google Classroom
2. The CoE teacher gives a detailed report on her observation on the school situation in e-Learning and suggestions on supports in the future.
7. CoE school (Primary sector)  
a. Document review of the CoE support

**Topic:**  
電子學習與資訊素養

**Level:**  
Primary

**Subject:**  
Chinese, English, Mathematics

**Date:**  
15-12-2015

**Aim:**
1. To provide class visit.
2. To introduce BYOD and cloud-based e-Learning platform.
3. To share experiences on adopting IT in teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the *lowest* to 4 is the *highest*)

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4 3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4 3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4 3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4 3 2 1</td>
<td>The CoE school principal demonstrates how e-Learning is developed in her school and how e-Learning can facilitate teaching and learning.</td>
</tr>
</tbody>
</table>

**Final:**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4 3 2 1</td>
<td>The seminar provides a strategic direction of e-Learning which is beneficial to the school managerial level.</td>
</tr>
<tr>
<td></td>
<td>Indicator</td>
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<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Communication and media</td>
<td>4</td>
<td>3</td>
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<tr>
<td>4</td>
<td>Cognitive skill level</td>
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**C3: Scalability**

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<td>1</td>
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<td>4</td>
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</tr>
<tr>
<td>2</td>
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<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

Final:
b. Document review of the CoE support

**Topic:**  
推行電子學習的校本經驗分享

**Level:**  
Primary

**Subject:**  
English, Mathematics

**Date:**  
14-01-2016

**Aim:**

1. To share experiences on adopting IT in teaching and learning.
2. To introduce iOS Apps for teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

### C1: Content

<table>
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<tr>
<td>4</td>
<td>Organization</td>
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</tbody>
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**Final:**

### C2: Pedagogy and Learning

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<th>Indicator</th>
<th>Rank</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
Instead of introducing Apps directly, the objectives of teaching and learning are first introduced and how currently available Apps achieve the objectives.

### Communication and media

Photos of student engagement in learning are provided.

### Cognitive skill level

N/A

### Collaboration

N/A

### Personalization

N/A

### Motivation and engagement

N/A

### C3: Scalability

<table>
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<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
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</tr>
</tbody>
</table>

### Remarks:

Apps introduced: iClass, Educreation, PingPong, Plickers, Popplet, Geoboard, and Book Creator
8. CoE school (Secondary sector):
a. Document review of the CoE support

**Topic:**
老師於教學中的電子學習應用，利用分享學習平台促進學生自主學習

**Level:**
Secondary

**Subject:**
N/A

**Date:**
11-05-2016

**Aim:**
1. To introduce the pedagogical models that support adoption of technologies in teaching and learning.
2. To introduce the application of tablet/mobile apps to facilitate teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

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**Final:**

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<td>Objectives and target groups</td>
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The presentation emphasizes the adoption of technologies is supported by pedagogical theories. (E.g., Bloom’s Taxonomy, SAMR Model and Technological Pedagogical Content Knowledge (TPACK) Framework)

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<th>Communication and media</th>
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<tr>
<th></th>
<th>Cognitive skill level</th>
<th>Rank</th>
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<td>4</td>
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<tr>
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<th>Collaboration</th>
<th>Rank</th>
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<tr>
<td>5</td>
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<table>
<thead>
<tr>
<th></th>
<th>Personalization</th>
<th>Rank</th>
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<tr>
<td>6</td>
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<td>N/A</td>
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<thead>
<tr>
<th></th>
<th>Motivation and engagement</th>
<th>Rank</th>
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<tbody>
<tr>
<td>7</td>
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<td></td>
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<td></td>
<td></td>
<td>Step-by-step guidelines of using mobile apps are clearly presented which enhance trainees’ motivation and engagement.</td>
</tr>
</tbody>
</table>

**C3: Scalability**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>3</td>
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<td>1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The apps introduced are generic which can be applied in various student levels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Discipline</th>
<th>4</th>
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<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The apps introduced are generic which can be applied in various disciplines.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Extensibility</th>
<th>4</th>
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<td></td>
<td>The workshop can be</td>
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<tr>
<td>delivered in other schools with similar situation with only minor adjustments.</td>
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</tr>
</tbody>
</table>

**Remarks:**

Apps introduced: Socrative, Schoology, and Total Recall
b. Document review of the CoE support

**Topic:**
老師於地理教學中運用電子學習應用實例個案分享

**Level:**
Secondary

**Subject:**
Geography

**Date:**
16-06-2016

**Aim:**

1. To introduce the application of AR sandbox in teaching and learning in Geography.
2. To share the experience of using AR sandbox in teaching and learning among junior and senior secondary students.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

**C1: Content**

<table>
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<tr>
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</tr>
<tr>
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<td>Attractiveness</td>
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<td>3</td>
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<tr>
<td>4</td>
<td>Organization</td>
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**Final:**

**C2: Pedagogy and Learning**

<table>
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<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3</td>
</tr>
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<td>Pedagogical design models</td>
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</tbody>
</table>
geography is presented.

<table>
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<tr>
<td>Motivation and engagement</td>
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Final:

**C3: Scalability**

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<th>Rank</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3 2 1</td>
<td>Separate sessions are dedicated for teacher delivering junior and senior geography classes.</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3 2 1</td>
<td>The workshop is tailor-made for Geography lessons only.</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3 2 1</td>
<td>The workshop is tailor-made for Geography lessons only.</td>
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Final:

**Remarks:**

Technology introduced: AR Sandbox
9. CoE school (Primary sector)
a. Document review of the CoE support

**Topic:**
介紹如何使用平板電腦應用程式促進課堂上的教學 Google Apps for Education 在教學上的應用

**Level:**
Primary

**Subject:**
N/A

**Date:**
14-01-2016

**Aim:**
To introduce how Google Apps for Education can facilitate teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the *lowest* to 4 is the *highest*)

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<td>3 2 1 N/A</td>
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<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1 The workshop focuses on how Google Classroom facilitates for material preparation and school administration.</td>
</tr>
</tbody>
</table>

**Final:**

<table>
<thead>
<tr>
<th>C2: Pedagogy and Learning</th>
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<tbody>
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<td>C1</td>
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<td>1</td>
<td>Student</td>
<td>4 3 2 1</td>
<td>The adoption is Google Classroom is universal and most teachers are able to pick up and manipulate the tool easily.</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4 3 2 1</td>
<td>Google Classroom can be used in various disciplines.</td>
</tr>
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<td>Extensibility</td>
<td>4 3 2 1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
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</table>

**Remarks:**

1. Google Apps for Education, Flubaroo, Quickmark
2. The preparation meeting allows the supported school to make sure necessary software and equipment are available for the workshop.
b. Document review of the CoE support

**Topic:**

介紹如何使用平板電腦應用程式促進課堂上的教學及促進學與教

**Level:**

Primary

**Subject:**

N/A

**Date:**

01-06-2016

**Aim:**

To introduce how tablet apps and Google Apps for Education can facilitate teaching and learning.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

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<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
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<tr>
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**Final:**

**C2: Pedagogy and Learning**

<table>
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<tr>
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<th>Rank</th>
<th>Remarks</th>
<th>Good practice</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>4</td>
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<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Communication and media</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The presentative slides are unable to provide sufficient information about the content of the workshop.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Cognitive skill level</td>
<td></td>
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</tr>
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<td>5</td>
<td>Collaboration</td>
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<td>2</td>
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<td>Personalization</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>7</td>
<td>Motivation and engagement</td>
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<td>3</td>
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**Final:**

**C3: Scalability**

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<th>Rank</th>
<th>Rank</th>
<th>Good practice</th>
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<tbody>
<tr>
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<td>4</td>
<td>3</td>
<td>2</td>
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</tr>
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<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Final:**

**Remarks:**

1. App introduced: Google Apps for Education, Socrative
2. The presentative slides are unable to provide sufficient information about the content of the workshop.
3. The preparation meeting allows the supported school to make sure necessary software and equipment are available for the workshop.
10. CoE school (Primary sector):

a. Document review of the CoE support

**Topic:**
推展電子學習於學與教的應用

**Level:**
Primary

**Subject:**
Mathematics

**Date:**
04-02-2016

**Aim:**
1. To provide class visits.
2. To introduce and share experience in e-Learning administration.
3. To introduce how e-Learning can be promoted within school.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1 The pros of e-Learning and the essential requirement of e-Learning are emphasized.</td>
</tr>
</tbody>
</table>

**Final:**

<table>
<thead>
<tr>
<th>C2: Pedagogy and Learning</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1 The pros of e-Learning and the essential requirement of e-Learning are emphasized.</td>
</tr>
<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3 2 1 The pros of e-Learning and the essential</td>
</tr>
</tbody>
</table>
Communication and media are emphasized. 

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Rank</th>
<th>Requirement</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Communication and media</td>
<td>4</td>
<td>3 2 1  N/A</td>
<td>The network infrastructure and tools can be adopted in schools of various sectors.</td>
</tr>
<tr>
<td>4 Cognitive skill level</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>5 Collaboration</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>6 Personalization</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>7 Motivation and engagement</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
</tbody>
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Final: 

**C3: Scalability**

<table>
<thead>
<tr>
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<th>Indicator</th>
<th>Rank</th>
<th>Requirement</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3 2 1</td>
<td>The network infrastructure and tools can be adopted in schools of various sectors.</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3 2 1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Final: 

**Remarks:**

1. Apps introduced: Nearpod, Kahoot, and Socrative
2. This CoE school emphasizes the importance of network infrastructure and awarded Hong Kong ICT Awards 2014: Best SME ICT (Adoption) Award.
3. One teacher suggested that it would be desirable if more information about planning, pilot running and actual implementation could be provided.
11. CoE school (Primary sector)

a. Document review of the CoE support

**Topic:**
电子學習計劃經驗分享

**Level:**
Primary

**Subject:**
Mathematics

**Date:**
19/02/2016

**Aim:**
1. To introduce the application of tablet/mobile Apps to assist teaching and learning.
2. To introduce the BYOD teaching and learning model.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3 2 1  N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3 2 1  N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1  N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1  A complete elaboration on the planning, design and implementation of e-Learning is given.</td>
</tr>
</tbody>
</table>

**Final:**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1  The presentation provides a clear direction of how BYOD can be implemented.</td>
</tr>
<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3 2 1  The e-Learning process follows the pedagogical theories. (E.g., Bloom’s</td>
</tr>
<tr>
<td>C1</td>
<td>Indicator</td>
<td>Rank</td>
<td>Good practice</td>
</tr>
<tr>
<td>----</td>
<td>-------------------------------</td>
<td>------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Student</td>
<td>4 3 2 1</td>
<td>The apps introduced are generic which can be applied in various student levels.</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4 3 2 1</td>
<td>The apps introduced are generic which can be applied in various disciplines.</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4 3 2 1</td>
<td>The workshop can be delivered in other schools with similar situation with only minor adjustments.</td>
</tr>
</tbody>
</table>

**Remarks:**

Apps introduced: Socrative and educreation
b. Document review of the CoE support

**Topic:**  
電子學習計劃及自攜平板電腦推行策略

**Level:**  
Primary

**Subject:**  
Mathematics and General Studies

**Date:**  
20/11/2015

**Aim:**

1. To introduce the application of tablet/mobile Apps to assist teaching and learning.
2. To introduce the BYOD teaching and learning model.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

### C1: Content

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3  2  1  N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3  2  1  A complete elaboration on the planning, design and implementation of e-Learning is given.</td>
</tr>
</tbody>
</table>

**Final:**

### C2: Pedagogy and Learning

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<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3  2  1  The presentation provides a clear direction of how BYOD can be implemented.</td>
</tr>
<tr>
<td>2</td>
<td>Pedagogical design models</td>
<td>4</td>
<td>3  2  1  The e-Learning process follows the pedagogical theories. (E.g., Bloom’s Taxonomy and the</td>
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<tr>
<td>1</td>
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<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Discipline</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

**Remarks:**

Apps introduced: Socrative, educreation, and popplet
12. CoE school (Special School sector)

a. Document review of the CoE support

**Topic:**
運用 Google 雲端平台及平版電腦於教學，善用網絡環境及流動裝置促進互動探究學習的成功策略

**Level:**
Special

**Subject:**
N/A

**Date:**
05-04-2016

**Aim:**
1. To introduce the pedagogical theories for catering for diverse learning needs.
2. To introduce the concepts of mobile learning and ubiquitous learning.
3. To introduce the tools for teaching and learning for SEN students, including Google apps and e-books.

**Evaluation** (A 4-point scale: from 1 is the lowest to 4 is the highest)

**C1: Content**

<table>
<thead>
<tr>
<th>C1</th>
<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Usability</td>
<td>4</td>
<td>3</td>
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<td>Attractiveness</td>
<td>4</td>
<td>3</td>
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<tr>
<td>4</td>
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**Final:**

**C2: Pedagogy and Learning**

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<th>Indicator</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
### Pedagogical design models
- **4**
- **3**
- **2**
- **1**

The presentation provides the pedagogical models that support e-Learning.

### Communication and media
- **4**
- **3**
- **2**
- **1**

The presentation is able to convey important concepts of e-Learning to audiences.

### Cognitive skill level
- **4**
- **3**
- **2**
- **1**

N/A

### Collaboration
- **4**
- **3**
- **2**
- **1**

N/A

### Personalization
- **4**
- **3**
- **2**
- **1**

N/A

### Motivation and engagement
- **4**
- **3**
- **2**
- **1**

N/A

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**C3: Scalability**

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</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>The concepts can be extended to students with different needs.</td>
</tr>
<tr>
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<td>Discipline</td>
<td>4</td>
<td>The concepts can be extended to disciplines.</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>The e-book system is able to cater for different kinds of learning materials.</td>
</tr>
</tbody>
</table>

**Final:**

**Remarks:**

Apps and software introduced: Google Apps for Education, Google Classroom and Rainbow One.
b. Document review of the CoE support

**Topic:**
介紹如何為有特殊教育需要的學生製作電子教材

**Level:**
Special

**Subject:**
N/A

**Date:**
15-04-2016

**Aim:**
1. To introduce the pedagogical theories for catering for diverse learning needs.
2. To introduce the concepts of mobile learning and ubiquitous learning.
3. To introduce the tools for teaching and learning for SEN students, including Google apps and e-books.

**Evaluation** *(A 4-point scale: from 1 is the lowest to 4 is the highest)*

### C1: Content

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<td>3 2 1 N/A</td>
</tr>
<tr>
<td>3</td>
<td>Attractiveness</td>
<td>4</td>
<td>3 2 1 N/A</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>4</td>
<td>3 2 1 The presentation material is well-organized with the idea of IT in education is clearly specified.</td>
</tr>
</tbody>
</table>

**Final:**

### C2: Pedagogy and Learning

<table>
<thead>
<tr>
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<th>Indicator</th>
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<th>Good practice</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Objectives and target groups</td>
<td>4</td>
<td>3 2 1 The objectives are clear which focuses on SEN</td>
</tr>
</tbody>
</table>
students, with capabilities of extending the concepts to other kind of student with different learning needs.

<table>
<thead>
<tr>
<th></th>
<th>Pedagogical design models</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The presentation provides the pedagogical models that support e-Learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Communication and media</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The presentation is able to convey important concepts of e-Learning to audiences.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Cognitive skill level</th>
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<th>3</th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Collaboration</th>
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<th>3</th>
<th>2</th>
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<table>
<thead>
<tr>
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<th>Personalization</th>
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<table>
<thead>
<tr>
<th></th>
<th>Motivation and engagement</th>
<th>4</th>
<th>3</th>
<th>2</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td></td>
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</tbody>
</table>

Final: | | | | | |

**C3: Scalability**

<table>
<thead>
<tr>
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<th>Indicator</th>
<th>Rank</th>
<th>Good practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student</td>
<td>4</td>
<td>3 2 1</td>
</tr>
<tr>
<td>2</td>
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<td>4</td>
<td>3 2 1</td>
</tr>
<tr>
<td>3</td>
<td>Extensibility</td>
<td>4</td>
<td>3 2 1</td>
</tr>
</tbody>
</table>

Final: | | | | | |

**Remarks:**

Apps and software introduced: Google Apps for Education, Google Classroom and Rainbow One.
Good Practices Extracted

The following 3 tables show the observed good practices extracted from the CoE documents review report with respect to the 3 criteria.

Related to Content

<table>
<thead>
<tr>
<th>C37</th>
<th>A clear presentation of the definition on flipped classroom with well-depicted examples.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C38</td>
<td>IT technologies are introduced (E.g., VR and screen mirroring) and being explained how these technologies facilitated teaching and learning.</td>
</tr>
<tr>
<td>C39</td>
<td>The presentation material is well-organized with the idea of IT in education is clearly specified.</td>
</tr>
<tr>
<td>C40</td>
<td>A complete elaboration on the planning, design and implementation of e-Learning is given.</td>
</tr>
<tr>
<td>C41</td>
<td>Various ways of e-Learning have been introduced with concrete scenarios, steps and cost. The pros and cons are explicitly specified.</td>
</tr>
<tr>
<td>C42</td>
<td>Contents are tailor-made to the school context and teachers from the supported school</td>
</tr>
<tr>
<td>C43</td>
<td>Elaboration on how e-Learning can be applied in various scope, include school-level, subject-level and class-level.</td>
</tr>
<tr>
<td>C44</td>
<td>The CoE school principal demonstrates how e-Learning is developed in her school and how e-Learning can facilitate teaching and learning.</td>
</tr>
<tr>
<td>C45</td>
<td>The pros of e-Learning and the essential requirement of e-Learning are emphasized.</td>
</tr>
<tr>
<td>C46</td>
<td>The motivation and rationale, pros and cons, points to note, and future development of using AR sandbox are clearly presented.</td>
</tr>
<tr>
<td>C47</td>
<td>The speaker specifies clearly the objectives of e-Learning and how it aligns with The Fourth Strategy on IT in Education.</td>
</tr>
<tr>
<td>C48</td>
<td>A well-written teaching plan is developed.</td>
</tr>
<tr>
<td>C49</td>
<td>A clear set of step-by-step of using Google Classroom is given.</td>
</tr>
<tr>
<td>C50</td>
<td>The requirement of e-Learning is reviewed (E.g., hardware and human resources). Then, concrete adoption of using IT for various disciplines were applied.</td>
</tr>
<tr>
<td>C51</td>
<td>The importance of e-Learning is emphasized at the beginning and case studies are provided to evaluate the effectiveness of Flipped classroom.</td>
</tr>
<tr>
<td>C52</td>
<td>The workshop focuses on how Google Classroom can facilitate for material</td>
</tr>
</tbody>
</table>
The importance of e-Learning is emphasized at the beginning and examples for successful adoption of e-Learning tools (E.g., an athlete using youtube) are given.

The CoE school speaker demonstrates how e-Learning is applied in his school and how e-Learning can facilitate teaching and learning.

The general elements of e-Learning are introduced with pros and cons clearly specified.

### Related to Pedagogy and Learning

| P81 | The presentation slides are concise and informative. |
| P82 | A set of step-by-step guidelines of using mobile apps is clearly presented which enhance trainees’ motivation and engagement. |
| P83 | The objectives are clear which focuses on SEN students, with capabilities of extending the concepts to other kind of student with different learning needs. |
| P84 | Examples of adaptation of IT technologies in various disciplines are given. |
| P85 | The apps introduced facilitates collaboration among teachers and students in the T&L process. |
| P86 | The way of building up an e-Learning teaching team is introduced. |
| P87 | The pedagogical theories that supports e-Learning are elaborated. |
| P88 | The rationale of using flipped classroom is elaborated. |
| P89 | The e-Learning process follows the pedagogical theories. (E.g., Bloom’s Taxonomy and the cognitive skill model) |
| P90 | The apps and software introduced facilitate collaboration among teachers and students in the flipped classroom approach |
| P91 | The pros of e-Learning and the essential successful requirement of e-Learning are emphasized. |
| P92 | Hands on workshop of e-Learning App is provided. |
| P93 | The project had a clear direction of how BYOD can be implemented. |
| P94 | The project is able to convey important concepts of e-Learning to audiences. |
| P95 | Photos of student engagement in learning are provided. |
| P96 | The pedagogical design of why using AR sandbox for teaching geography is presented. |
| P97 | Instead of introducing Apps directly, the objectives of teaching and learning are first introduced and how currently available Apps achieve the objectives. |
| P98 | The TPACK model is introduced. |
Separated workshop sessions are offered for more hand-on practices for teachers.

Instead of introducing Apps directly, the objectives of teaching and learning are first introduced and the CoE teachers explain how currently available Apps achieve the objectives.

The apps introduced facilitate collaboration among teachers and students in the T&L process.

Hands-on practices are provided to the teachers during the workshop.

The seminar provides a strategic direction of e-Learning which is beneficial to the school managerial level.

The roadmap of IT development is clear and sheds light to the support school the path of adopting IT in teaching and learning.

The presentation emphasizes the adoption of technologies is supported by pedagogical theories. (E.g., Bloom’s Taxonomy, SAMR Model and Technological Pedagogical Content Knowledge (TPACK) Framework)

### Related to Scalability

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>S32</td>
<td>The workshop can be delivered in other schools of similar situation with only minor adjustments.</td>
</tr>
<tr>
<td>S33</td>
<td>The concepts introduced, e.g., flipped classroom, can be extended to other disciplines and student levels.</td>
</tr>
<tr>
<td>S34</td>
<td>The apps introduced are generic which can be applied in various disciplines and student levels.</td>
</tr>
<tr>
<td>S35</td>
<td>The e-Learning tools can be adopted in various disciplines.</td>
</tr>
<tr>
<td>S36</td>
<td>The adoption is Google Classroom is universal and most teachers are able to pick up and manipulate the tool easily.</td>
</tr>
<tr>
<td>S37</td>
<td>The e-book system is able to cater for different kinds of learning materials.</td>
</tr>
<tr>
<td>S38</td>
<td>Google Classroom can be used in various disciplines.</td>
</tr>
<tr>
<td>S39</td>
<td>Separated workshop sessions are offered for more hand-on practices for teachers.</td>
</tr>
<tr>
<td>S40</td>
<td>The network infrastructure and tools can be adopted in schools of various sectors.</td>
</tr>
<tr>
<td>S41</td>
<td>Separate sessions are dedicated for teacher delivering junior and senior geography classes.</td>
</tr>
</tbody>
</table>
Appendix C - CoE Supporting Workshops Review Report

Centre of Excellence (CoE) Scheme Supporting Workshops Review for Consolidation and Redevelopment Work on IT in Education

Prepared by:

Project Team (PM: Vincent Ng)

Department of Computing

The Hong Kong Polytechnic University

Sept 2016
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A. CoE Scheme review: Preparation meeting observations

1. Prep meeting
   Date: 22nd June, 2016
   Time: 10:45am - 11:30am

PolyU Team observations:
   a. The CoE teacher tried to understand the IT infrastructure at the school in order to plan the up-coming on-site support and suggested certain e-Learning tools that are feasible to be adopted at the school.
   b. The CoE teacher introduced some e-Learning tools and explained how to use the tools in specific subject to the teacher-in-charge.
   c. Since the school has requested the on-site support to focus on Chinese Language, the CoE teacher explained that the up-coming workshop would focus on teaching and learning. He further explained that for language courses, e.g. Chinese/English, the focus would be using various e-Learning tools to assist teaching and learning.
   d. The CoE teacher also suggested that a classroom setting would be better than a computer lab for the teaching demo (示範課) as it resembles a teaching environment.

2. Preparation meeting
   Date: 23rd June, 2016
   Time: 9am – 10am

PolyU Team observations:
   a. The teachers at the school mentioned that there were 30% of teachers of the school were adopting IT in teaching and learning. The CoE teacher commented that the percentage was similar as that in other schools in Hong Kong. The computer literacy of school teachers varies while the teachers believed that students are capable of manipulating IT technologies effectively.
   b. The teachers would expect the workshop would help the teachers understand how to utilize tablet devices in teaching and learning and sought for the possibility of having “Flipped classroom”. They emphasized that game apps might not be a suitable choice.
   c. The infrastructure of the school greatly affects the implementation of e-Learning, e.g. WiFi network and hardware equipment (tablets), etc. The school is not having enough tablets (currently only 30 units available) and the current WiFi infrastructure is unable to provide simultaneous access to Internet
resources because some of the e-Learning tools, e.g. Nearpod, have a high network requirement. CoE teachers suggested that the adoption of IT in teaching and learning should not be too aggressive unless there were sufficient software and hardware resources available.

d. The CoE teacher also shed some lights on the direction of e-Learning by introducing learning management system and teaching materials management (E.g., Google Classroom).

e. The CoE teacher highly recommended the school principal and vice-principal to attend the workshop. It helps encourage more teachers at the school in adopting e-Learning in lessons.

**General observations:**
School teachers have a high expectation of adopting e-Learning but they are unfamiliar with the e-Learning tools available and their purposes. We realized that CoE teachers had to first elicit the teaching and learning requirement from the school teachers and then propose possible solutions and tools accordingly. We recommended that a resource package can be created in which common e-Learning tools can be introduced and the purposes and the outcome of each tool are clearly explained so that by referring to the package, schools teachers can tailor-make a suitable IT environment for teaching and learning based on their requirement.
B. CoE Scheme review: CoE Supporting Workshops observations

1. On-site support

Date: 4th July, 2016 (Mon)  
Time: 10am – 12pm  
No. of attending teacher: 10

PolyU Team observations:

   e. The CoE teacher shared the development of e-Learning in their school; the CoE school has started e-Learning 5 years ago.

   f. The CoE teacher explained that e-Learning development had different stages: the use of apps as the first stage, flipped classroom as the second stage, and LMS, e.g., using Google Classroom at their school is the final stage.

   g. The CoE teacher emphasized the practice and culture of peer observation (同儕觀課) among teachers is very beneficial. Moreover, he also shared that peer observation did not need to be limited to teachers of the same subject, but can also invite other teachers to observe as well.

   h. Demo class (Chinese Language Learning):
      ▪ The CoE teacher has invited the teachers to use the iPad apps.
      ▪ Apps introduced: 1. Nearpod
         - Aim: strengthening students’ learning (in Chinese writing) through interaction and collaboration
         - Function of the app: Q&A, highlighting paragraphs, allowing handwriting on image, and editing the same file together and peer-learning among students (同學互評)
      ▪ Apps introduced: 2. Kahoot!
         - Aim: arouse students’ interest as the app is game-based and interactive

   i. Demo class (the use of Google Drive and Google Form):
      ▪ The CoE teacher demonstrated the use of Google Form in preparing quizzes for students, aiming at collecting data from students’ results instantly.

2. On-site support

Date: 5th July, 2016 (Tue)  
Time: 1:00 – 3:00pm  
No. of attending teacher: 20

PolyU Team observations:

   a. The CoE teacher explained the administration of using Google Apps for Education, such as the use of Google Calendar in managing the reservation of
iPad/equipment/facilities within the school.

b. The CoE teacher introduced the collaborative learning environment provided by google (e.g., drawing and document editing) and pinpointed the advantages, disadvantages and tips of using these tools.

c. The CoE teacher guided the teachers in using Google Form and Google Classroom and invited the teachers to try creating worksheet for students via Google Form.

d. The CoE teacher introduced the Google Expedition which made use of the Virtual Reality (VR) technology to facilitate T&L by immersing students in virtual journals in space and historical sites.

e. PolyU Team observed that some of the teachers were having a variety of literacy in Google applications.

3. On-site support

Date: 7th July, 2016 (Thu)
Time: 9:30am – 12:00noon
No. of attending teacher: 60

PolyU Team observations (Apps for Mathematics and Science subjects):

a. The CoE teacher shared the e-Learning development at his school; the CoE school has started e-Learning development since 2013 and F.1 and F.2 classes are implementing BYOD and F.4 and F.5 are using MacBook in class.

b. The CoE teacher emphasized e-Learning should be using the “Right technology at the Right time for the Right task” and focus on students’ creativity and innovation.

c. A suggested lesson plan (Using iPad in class):

- First 5 - 10 minutes in class: provide instructions to students of when they will use the iPad in what area (e.g., using iPad in creating mind map) for better class management.

- Grouping of students (around 3 – 4 students per group) in promoting peer-learning and team working.

d. Apps introduced:

- 1. Skitch
  Function: as a visualizer for presentation (students can use airplay to share their work on Apple TV)

- 2. Socrative
  Function: Q&A (including MC and open-ended questions), generate reports in excel and pdf format; teachers can know students’ performance and feedback
instantly
  ▪ 3. Keynote
  Function: as a visualizer for presentation (with recording feature)
  Teachers and peers can review the process of students’ learning
  ▪ 4. Calculator
  Function: auto recognition of handwriting input formula and calculation
  ▪ 5. Desmos
  Function: graph plotting (app and web versions)
  ▪ 6. Explain Everything
  Function: video recording and online sharing
  ▪ 7. Camera (the built-in app on iPad)
    - The CoE teacher explained that the use of camera and its video recording
      feature could be very useful in class. The CoE teacher asked his students to do
      math exercises (preferably more difficult questions) and asked them to record
      their verbal explanation of the calculation process. Students are able to learn and
      revise via these videos uploaded on YouTube Channel/ school platform.
    ▪ 8. Notability (a paid app)
      Function: Teachers are able to draw/highlight on teaching slides to provide
      supplementary information to students during lesson delivery. The app supports
      common file format. (e.g., ppt, doc, and pdf)

4. On-site support
Date: 22nd August, 2016 (Monday)
Time: 2:30pm to 5:30pm
No. of attending teacher: 40-45

PolyU Team observations:
1. The CoE teacher suggested various e-Learning tools for different subjects,
   including Chinese Language, English, Mathematics, Visual Arts, Music and
   Technology Education (電腦科);
   ▪ “Ping Pong” – provide various question types, e.g. multiple choice, short
     answers, True/False questions; also have a drawing function is useful in
     various subjects, Chinese (to learn order of strokes of Chinese
     characters), English (to learn spelling of English words), and
     Mathematics (to learn Maths calculation)
   ▪ “Super Duper StoryMaker” for listening and speaking practice
     (Chinese and English)
   ▪ “Write About This” for writing (Chinese and English)
1. “Flash Academy” for language learning (object translator: students can scan an object and translate to different languages)
2. “Crazy Tangram”
3. “The Human Body by Tinybop” for students to learn the structure of a human body
4. “Quiver” for Visual Arts (students can colour the colouring page provided by the company and bring alive the drawings by using a 3D augmented reality technology)
5. “Piano Free with Songs” for piano learning
6. “Blue-Bot” for learning to code

2. The CoE teacher advised the teachers to keep a good record of teachers’ experience and feedback on a system. This is a knowledge management, a consolidation of teachers’ past experience of using e-Learning, and crucial for revisions of the pedagogical practices and the school’s e-Learning development.

3. The CoE teacher also shared her experience in using Flipped Classroom. She has suggested the following apps for the school to use:
   1. “EDpuzzle” – an app for teachers to create video for their lessons; easy to crop a video, explain with the teacher’s own voice, and add quizzes at any time in the video (Teachers can also know the students’ answers, submission time as well as the watch time of students)
   2. “TED-Ed Lessons” – a website which provides quality videos for stimulating discussions with students
   3. “Screencast-O-Matic” – a free video editing tool for video recording

5. On-site support
   Date: 29th August, 2016 (Monday)
   Time: 9:00am-12:00nn
   No. of attending teacher: 20

PolyU Team observations:
1. The CoE teacher suggested his school’s experience in purchasing mobile devices, iPads and their accessories and chargers. For instance, he suggested to include a service of sticking monitor protection stickers on iPads in the vendor’s service contract in order to save teachers’ time and effort. He has also given some more suggestions on iPad charger models comparisons and mobile device management. For mobile device management, he reminds the teachers to lock iPad apps, setting restriction on internet/website access, and setting
2. The CoE teacher shared his experience of BYOD (Bring Your Own Device) at his school with the teachers. He suggests to choose publishers that have electronic and paperback academic books.

3. The CoE teachers, have also shared various e-Learning tools for teachers to use. The CoE teachers first explained the features of the apps, then utilized the last hour in the workshop to guide the participating teachers on how to build and answer questions in the apps.
   - **Plickers**: This app is useful for setting up multiple-choice questions. Students do not need to use iPad/mobile device and simply use a paper to answer the questions. Their participation is high as well. Each question has its own report with each students’ answer.
   - **Nearpod**: It can encourage students to participate in class. It engages students’ participation by using easily imported graphical PowerPoints.
   - **Socrative**: It is less attractive than Nearpod/Plickers but it is useful for assessment.
   - **Kahoot**: It only have multiple-choice questions format and it is better for assessment. Website accessible only.
Appendix D - Phase 2 Study: Interview Findings Full

Analysis

Part 1: Introduction

In order to have further understand the project impact, success factors, good practices and sustainability of the reviewed projects, the project team has conducted focus group interviews with three schools. Details of the interviewed schools are shown in Table 2.

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Number</th>
<th>Name of Project</th>
<th>Name of School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QEF Project [2012/0102]</td>
<td>Building up a Community Network for Fostering Character Education</td>
<td>Lok Sin Tong Young Ko Hsiao Lin Secondary School</td>
</tr>
<tr>
<td>2</td>
<td>e-Learning Pilot Scheme project</td>
<td>The Youth of Creative Media Education</td>
<td>Chi Hong Primary School</td>
</tr>
<tr>
<td>3</td>
<td>e-Learning Pilot Scheme project</td>
<td>Mutual Active Learning System for Students with Dyslexia – Starwish Digital Language Laboratory</td>
<td>Sam Shui Natives Association Lau Pun Cheung School</td>
</tr>
</tbody>
</table>

Table 1: Details of the schools interviewed

To analyse the interview data, the researcher read through the interview report a number of times and jotted down notes to identify key words. Emerging essential ideas to potential themes and summarizing the relationship between themes, the researcher has come up with the overall theme and pattern. Results from the analysis are discussed in the following sections. Specifically, the interview feedback helps project team to find out more on:

1. The success factors for using e-Learning in school
2. The impact of e-Learning on students learning
3. Challenges and suggestions stakeholders have
Part 2: Success Factors

Consistent with the Phase I study, success factors in the evaluation framework such as functionality, usability, communication and media, collaboration etc. were also mentioned and identified by interviewees (e.g. project members, teachers and students) as essential to conduct a successful e-Learning projects.

i. Easy to use

Functionality (系統的功能) was viewed by students and teachers in the interviews as the most important factor for the tools used in the e-Learning study to successful. They suggest that these tools should be user-friendly and easy-to-use as well as including some common features such as the save and export function which they can export their work to their tablets.

Similar features are also welcomed by teachers. For example, an e-Learning system is appreciated by teachers because it can assist teachers to tailor-made teaching materials for their students and also enabling teachers to share their teaching resources with colleagues. Teachers can simply import existing teaching materials in Word/PPT/PDF formats to the system and insert interactive elements, such as teachers can add a camera function for students to take pictures for assignments.

For teachers’ ease of use, features for teachers to be able to monitor all students’ computers in class and control students’ web browsing capability would be useful to reduce the risk of learning distraction.

ii. Interesting and fun

All students interviewed mentioned that they love e-Learning because it’s interesting and more fun than traditional class activities. A list of e-Learning features providing playful feeling during learning is presented as below with examples:

- Multimedia instead of texts

Replacing texts with multimedia such as audio, video, animations would engage students for the learning better.

Here is an example of using video. The interviewed students shared their experiences in using an e-Learning platform called Schoology in the subject of Liberal Studies. They will first watch videos on different topics followed by a
discussion with the teacher in class. For one of the interviewed students, he and his classmates recently watched videos about obesity, and they discuss the causes and effects of this growing social phenomenon with teachers and peers in class. He also shared that there are a number of videos for students to watch on this platform, and to secondary school students like him, videos are more attractive. Here is an example of using audio. Passage reading software (發聱系统) reads aloud the passages in the e-books. The passage reading software in Rainbow One supports Cantonese and Putonghua, and students can also adjust the pace of the reading. On one hand, this helps students to review the whole passage and learn through listening. On the other hand, it saves teacher’s time in recording.

Here is an example of using animation. Stroke order (筆順) function and exercise are also available in Rainbow One. Students can click any words they want and watch the display of stroke order of the Chinese characters for self-learning and revision at home, or sometimes teachers will invite students to complete the exercise during class depends on the time. The stroke order tool can detect students’ stroke order writing in the exercise, and will pop up a reminder of the next correct stroke if students write it incorrectly. A dictionary is also embedded in the system for students to learn about words they do not understand (詞解).

- **Game instead of tedious work**

Individual exercise in and outside classrooms would sometime be boring and tedious. With games, students would be more interested in participating and learning.

One example is shared by students with their experience of using the e-Learning tool Kahoot in English lessons. Their English teacher first asked them to identify the English words in a passage that they do not understand and look up in a dictionary as a home assignment. In class, the teacher divided students in groups of 2 and played Kahoot. To score in the Kahoot game, the students needed to understand the meaning of the words and to identify the correct English words for the questions. The teacher usually played the game with the class for around 15 minutes.

Similar pleasant experience was also reported by other students in other classes. For example, game-based learning is also adopted in the Mathematics lesson. One of the interviewed students shared that the teacher has started a Mathematics competition by playing an iPad game. Students will need to solve different
Mathematics questions to score and win the game. He enjoys this way of learning very much as he would like to get a higher score and win the competition. He mentioned that having such competition and competing with their peers are more interesting than just doing exercises on his own. Moreover, the other interviewed students also shared their experiences in when they will use iPads in learning Mathematics: the teacher uses the iPad game as a revision tool; each student will be given an iPad after learning a chapter of Mathematics theories and concepts, and the iPad game provides an opportunity for them to revise what they have learnt in the last chapter and apply their knowledge in solving the problems in the game.

Without competition, games are also attractive. One of the students shared that one of her favorite games is Literal Maze (文字迷宫). This game is to learn about sentence structure (句子結構遊戲). The student shared that she likes to play this game because it helps to improve her thinking ability and learn about the sentence structure of Chinese. Another game she shared is Words in Clouds (字在雲中尋). This game is to learn about grapheme structure (字形結構遊戲). Another interviewed student shared his favorite game with us, The Reflection Pond (明鏡照天詞). He shared that the question will show a theme, such as “Spring Weather”, then he will select appropriate words as the answer (找字遊戲). He likes it because the game helps to enhance his memory ability, memorizing the Chinese words.

- **Visualizing abstract concept**

e-Learning materials could be useful to present abstract objects with concrete visualization and facilitate students understanding of difficult concepts. Tinkercad (Creating 3D digital designs with online CAD) is an example. The students used this e-Learning tool in computer lessons/at home in learning two-dimensional and three-dimensional concepts and shapes. The teacher would select some of the excellent work, i.e. three-dimensional models and print them out with a 3D printer. The interviewed students shared that they feel very satisfied in learning with this e-Learning tool and building their own 3D models.

iii. **Instant teachers’ feedback**

Prompt feedback provided by teachers is always preferred and proved to be the best practice to engage students. E-Learning platforms and tools which can facilitate the instant teachers’ feedback are valued by both teachers and students.
As an example, the interviewed teacher shared that auto-correction function for exercise such as MC questions is an important function in an e-Learning system. Not only it saves teachers’ time in correcting simple questions, students can also get immediate feedback and the correct answer after completing the exercise at home.

Another teacher shared that it is faster and more convenient for him to give feedback to students. He can immediately give feedback and discuss with the students if there are any mistakes. For paper-based assignments, it may take him a week to review and comment before giving back to the students.

Here is one example from students’ perspective. For the project of Character Education, an e-Learning platform was built and used. Students first watched videos about the stories of Hong Kong Spirit Ambassadors (精神大使) followed by a class discussion on the core values and spirits demonstrated by the Ambassadors. One of the interviewed students recalled that they usually have the lesson in a computer room and they will type their views and comments in a text box on the e-Learning platform. Their teacher can immediately read the students’ comments submitted and discuss with them in class. She also shared that it is easy and convenient to type out her views compared to writing them down on paper.

iv. Interactivity, Collaborative and peer learning

Interactivity, collaborative learning and peer learning are popular terms when students are referring to e-Learning.

e-Learning platform can easily provide facilitation to the above approach of learning. For example, as a result of using the e-Learning platform for Character Education, different stories can be uploaded on the platform and the students are able to share their work with peers. Without the e-Learning platform, teachers and students will rely on paper-based learning materials. Teacher will need to prepare the learning materials, and discussions will be limited on the paper-based materials. With computers and the e-Learning platform, students have the freedom to choose stories they are interested in. As a result, there are rich learning resources on the platform with more students uploading their work on the platform.

One important benefit of having a collaborative sharing platform is that it can increase students’ motivation a lot to learn. For instance, in the Secondary One
Geography lesson, each student will be given an iPad. They will use Google Map in learning different landscapes from a bird’s eye view. The teacher using the platform mentioned that PowerPoint is also a possible e-Learning tool which teachers can use but it is a non-interactive resource compared to iPad. The students are more excited in using the iPad to learn. Another teacher in the interview also shared that students usually work harder on these e-assignments as they know their work will be shared and viewed by their peers, and thus increasing their learning motives.

Besides teachers, students also mentioned that it is much engaging if they share their own work and view their peers’ work and comment. For example, Camera function helps to increase the interactivity with students. For instance, in one of the chapters about the phases of the moon, students used the camera on iPad to take photos of the moon and submit to the e-Learning platform. Teacher then displayed students’ work in class and turned out the students captured different phases of the moon and their work can be shared with their peers.

v. Flexibility

There is no system that can fit all needs. Teachers who were involved in the e-Learning projects and/or making use of the system mentioned during the interview that flexibility is the key for a successful and sustainable e-Learning project.

A system which can be extended with features needed from time to time is preferred by teachers. For instance, one e-Learning system is appreciated a lot by teachers as it has various easy-to-use tools for teachers to embed in the teaching materials (some tools can be easily drag-and-drop to the teaching materials on the platform), increasing the interactivity of the exercise and learning materials. Moreover, it is also important for the system to support different formats. For instance, teachers at their school can easily import existing teaching materials in PDF/Word to the system and generate an interactive format.

Compatibility with new applications in the market is equally important as built-in functionalities. One teacher even regarded the compatibility of the platform is the most important as he considers using e-Learning. He mentioned that there are more and more new apps in the market, and it is crucial for the platform to have a high compatibility so that he can embed links or any other new apps in future.
Flexibility in terms of platform is also preferred. A system which is cross-platform friendly especially mobile friendly is valued by teachers who is practicing flipped classroom. He stated that as this e-Learning platform is cross platform (Web and tablets); students can prepare for the lesson at home and continue to self-learn after class. Students also shared this experience. One student mentioned that e-Learning is more interesting which makes her more eager to learn. She likes the fact that she can easily access the e-Learning materials and related information with her mobile phone while commuting or anytime she wants.

Developing a system which can facilitate cross-disciplinary learning experience is another good practice. For example, The Youth of Creative Media Education (YCME) – The school developed their e-Learning system for a cross-disciplinary curriculum; Visual Arts teachers and Computer Studies teachers collaborated together in guiding students in creating their own animations using this e-Learning system. For instance, in Visual Arts lesson, the students were first divided into groups in creating ocean-themed animations. Some students were responsible for drawing the background for the ocean, some were responsible for drawing various sea creatures such as mermaids. Then in Computer lessons, their drawings would be scanned and added to their animations. Sometimes they would collaborate with Chinese Language and Music teachers, and students would add some Chinese sentences and background music for their animations.

vi. Personalization

Catering for different learning styles is mentioned during the interview as one of the most important aspect of making use of e-Learning. It is preferred to have a system and/or platform which can be personalized according to students’ learning status, progress, styles, preference etc.

Students and teachers shared their nice experience with the successful e-Learning projects. For example, to cater different students’ needs, there is a “Tip” function (小錦囊) which can be embedded in the e-books. For high-ability students, they can click the ‘Tip’ tool and watch more additional information for self-learning. For instance, in learning the phrases of the moon, the “Tip” function includes a passage of a Chinese legend (嫦娥奔月) for students’ extra information and self-learning. Another project also helps to support different students with different learning abilities; for those with higher ability, they can draw and create their own animations all by themselves; while for those with lower ability, they can find photos or ready-made clip arts from the internet and add them to their
A personalized user interface is favored by students. For example, in one of the e-Learning platform, students were able to personalize the platform with her favorite color and graphics, and they enjoyed using the platform for her learning. In addition, one student also shared that there is a section on the e-Learning platform where she can click and view the submitted work by other students. She finds this very useful as she can learn from other peers whose work has better sentence structures and examples suggested.

vii. Resource center

Students recommended systems and/or platforms which function like a repository of useful resources. For example, students recalled the usefulness of using one web-based platform. There are past papers, multiple-choice exercises, and latest newspaper updates available on the platform. One of the interviewed students recalled that his teacher would suggest the students to do the exercises on the platform during summer holiday but it is not mandatory. He thinks that this platform is useful as it is convenient for them to access all past papers on one platform. He also thinks that it is very environmentally friendly as the teacher does not need to print out all the past papers for the students.

Part 3: Impact of e-Learning

Recalling the learning experience with e-Learning projects, teachers and students also identify the impacts of e-Learning.

i. Increase in interest and motivation

All teachers and students in the interview shared the view that the biggest impact of e-Learning is the increase of students’ learning motives. For instance, teachers observed that students are more excited when they can use the iPad to compete in a game. Other teachers observed that the creation of animations helps to boost the learning motives and confidence of students.

The impact is regarded equally significant for low-motivated students. One reason is the attractiveness of using e-Learning materials. The other reason is the peer learning feature embedded in the e-Learning project. One example is shared by a student who stated that the Kahoot game really helps to motivate the students who always do not complete their homework to look up the new words as they would like to get a higher score in the game.
ii. Development of abilities and skills

Besides the specific skills the e-Learning projects are targeted to develop to facilitate students’ learning (e.g. reading skill for an English class), Teachers and students reported that e-Learning can facilitate the development of various general abilities and skills.

- Computer literacy

The use of e-Learning helps improving students’ computer literacy, and familiarize them with computer skills for future use.

- Communication skill

As e-Learning involves collaborative learning and peer interaction a lot, playing or working in a team increases the communication level and the communication skills are enhanced through this kind of learning approach.

- Special Education Need (SEN)

e-Learning projects developed for SEN students provide efficient training tools for capacity building. For example, a project developed a web-based game which provides multi-sensory training through playing the games, such as to train visual tracking and visual exploration (視覺追蹤、視覺探索), hearing ability, and to increase attention span.

- Creativity

Many e-Learning projects involve students in product creation, e.g. animation, video, story. The participation of the creation process naturally increases the creativity. For example, one student shared that using e-Learning design tools helps to generate creative ideas and articulate ideas. He thinks that he cannot draw the shape of an apple nicely on an art paper and it is very discouraging. However, with e-Learning design tools, he can use different tools to draw and express his own ideas.

- Problem solving

Task oriented learning is better facilitated by e-Learning. While completing task either individually or in a team, students are exposed to a number of unpredicted problems and the whole learning process improves their problem solving skills. For example, one of the interviewed teachers shared that some students wanted...
to create some special effects for their animations and did not know how to
create these effects. For instance, one of the students wanted his characters to fly
in the background and the teacher would ask the student some guiding questions
and let the student to figure out which tool he can use in order to create the flying
effect. In this process, the role of the teacher is to guide the students and the
students solved the problem themselves.

iii. **Self-directed learning**

Students found they are more willing to learn by themselves because of
e-Learning. A student shared her experience of becoming more eager and
interested in searching new information. She said that with technology, she can
search for information on a computer or her mobile phone when she has questions.
In a traditional classroom, she cannot use her mobile phone and search for
information when she does not understand a term/word mentioned by the teacher,
and she feels lost in class.

Another student shared that the learning experience of using the e-Learning tool
equips them with new skills, and this learning process motivates and inspires them
to try further.

iv. **Increase in learners’ satisfaction**

Students also found e-Learning could a higher level of satisfaction as they were
engaging in the tasks. For example, students using e-Learning tools to build their
own 3D models shared that they feel very satisfied in learning with this
e-Learning tool and therefore have a very positive attitude towards learning as
general. Another group of students shared that they particularly enjoyed the games
with different levels and the higher level he achieved, the more satisfied they felt.

v. **Increase in sharing as a learning community**

Sharing and team spirit building is easier because of e-Learning. For example,
students shared that it is nice that they paired with their peers in playing the game.
If they played the game individually, they feel like they cannot ask their peers if
they do not know the answer as it is a competition. However, for groups of 2, they
can discuss with their groupmates and score together. Not only they can learn the
new English words, it also helps to build up their team spirit. Project leaders also
agreed that using e-Learning helps to engage students and encourages sharing
among peers.
Part 4: Challenges and suggestions

Teachers involved in project development identified various challenges they met and gave suggestions for future improvements.

i. Collaboration between schools and commercial organizations

It is a common practice for schools to contract commercial organizations in developing the e-Learning system in order to handle technical difficulties. While the commercial organizations such as software house bring expertise in system development and thus enhance the project output, there are potential conflicts between schools and these organizations in terms of the financial interest.

For example, one project team shared that they faced great difficulty in negotiating and collaborating with commercial organizations in terms of copy-right and technical support issues. They finally decided to give up using the e-Learning system developed because of no agreement could be achieved with the contracted company. To prevent the similar consequences from happening in future projects, they suggest that it is better to have support from the funding in negotiating with the commercial organizations. It would also be better for the school/NGO to hold the copy-right of the tools/platform for future development of the tools/platforms.

ii. Sustainability

All schools in the interviews agreed with the challenge of sustaining and maintaining the system/platform produced by an e-Learning project after it completed and used up the funding. For example, teachers who helped in the process of e-Learning development shared that the school used a platform called iLap before. In the beginning, they have enough server space to use but soon they do not. From a school’s perspective, it is expensive for them to purchase more server space. Moreover, IT support at the school is limited; they may not have enough time and skills to maintain the platform as some members of the support team have teaching duties as well.

iii. Sharing and monitoring

Sharing among teachers using e-Learning system which in turn enhances the value of the system is suggested by teachers. The rationale behind is that with more teachers to share their teaching materials, the platform would be equipped with more resources and this sharing in term would benefit more teachers with different disciplines and backgrounds.
However, students sharing on the system might create challenges for teachers. For example, some teachers stated that they really need to pay attention and screen out the students’ comments on their peers’ work published on the e-Learning system as some of these comments include rough words or have negative impact on peers. This monitoring process might increase teachers’ workload.

**iv. Hurdles and trends**

Teachers identified the hurdles of implementing e-Learning in schools. For example, the teachers stated that some colleagues may be reluctant to use e-Learning in their teaching as they might not have the confidence in using the e-Learning tools in teaching. Moreover, the lack of hardware support such as Wi-Fi support might also create difficulties for schools.

One teacher shared his view of the development of e-Learning in school; with technological advancements, tools can easily be replaced but the learning objective is the most important. Bare this in mind, the e-Learning systems to be developed should take the learning outcomes as their first priority.
Appendix E - Phase 2 Study: Interview Questions and Interview Reports (3 interviewed schools)

Part 1: Interview Questions

Teachers’ Interview Questions

Questions:

1. What is/are the most attractive elements of the use of e-Learning? (在把電子學習運用於教學中，哪些方面你認為最有吸引力？）

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude? 你認為電子學習系統和項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？）

3. What’s the impact of using e-Learning for your learning? (你覺得電子學習對於學生的學習有哪些幫助與影響？)

4. Do you think the use of e-Learning help your students in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills? (你認為電子學習對於以下方面對你的學生有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

5. What do you think are the success factors for an e-Learning project? (你認為哪些是一個電子學習項目成功的因素？)

6. What would motivate you to participate an e-Learning project? (你認為哪些因素令你很有興趣參加電子學習的項目？)

7. What are the biggest challenges and/or difficulties when doing e-Learning development, implementation and/or participation? (在進行電子學習的開發，實踐或者參與中，你遇到的最大的困難和挑戰是什麼)

8. How to sustain an e-Learning project? (你能給如何持續性的发展電子學習項目提一些建議嗎？)

9. What would you suggest about the use of e-Learning? (你對如何更好的利用電子學習幫助教學可否給一些建議？)
Teachers’ interview questions (cont’d)

Questions:

1. 該項目是如何執行的？請具體描述在項目執行中是如何運用電子學習資料進行教學的。

2. 投入該項目的資源是否物有所值？

3. 在進行電子學習的開發，實踐或者參與中，最大的困難和挑戰是什麼？

4. 能夠如何持續性的發展電子學習項目提一些建議嗎？

5. 在項目執行中，哪些部分取得比較好的效果，原因何在？

6. 在項目執行中，哪些部分的效果還有可改善的空間，如何改進？

7. 該項目產生了哪些影響？

8. 有無任何補充？

- Students Interview Questions

Questions:

1. What is/are the most attractive elements of the use of e-Learning? (在電子學習運用於學習中，哪些方面你認為最有吸引力？)

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude? (你認為電子學習的系統或者參與的項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？)

3. What’s the impact of using e-Learning for your learning? (你覺得電子學習對於你的學習有哪些幫助與影響？)

4. Do you think the use of e-Learning help you in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills? (你認為電子學習對於以下方面對你有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

5. What do you think are the success factors for an e-Learning project? (你認為哪些是一個電子學習項目成功的因素？)
6. What would motivate you to participate in an e-Learning project? (你認為哪些因素令你很有興趣參加電子學習？)

7. What would you suggest to the teachers about the use of e-Learning? (你可否給老師們一些建議如何更好的利用電子學習幫助同學們的學習？)
Part 2: Interview Report at Lok Sin Tong Young Ko Hsiao Lin Secondary School (QEF Project [2012/0378])

Students Interview
Project: Building up a Community Network for Fostering Character Education
Date & Time: 13th September, 2016, 4-5pm
Venue: Lok Sin Tong Young Ko Hsiao Lin Secondary School
Interviewer: Dr. Laura Zhou, Ms. Sharon Keung
Interviewees: 6 Secondary Five students; 3 male students, 3 female students

E-Learning tools/platforms using:
- Multimedia, e.g. videos, songs
For instance, in Chinese Language Learning, teachers sometimes use videos in teaching Chinese classical prose. Teachers first invite students to watch the videos at home, and have discussions in class. According to the students interviewed, they usually learn Chinese classical prose by reading and studying the textbook. To them, watching videos and animations explaining the Chinese classical prose is more interesting and easier to understand. (Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)

English teachers at their school also use multimedia in designing learning materials. One of the interviewed student shared that one of the English teachers has used English songs to increase students’ vocabulary. The teacher has provided a few English songs for the students to choose. The interviewed student likes this arrangement as she thinks that different students have different taste in music. It is good that they can choose their favourite song and complete the following exercise. (Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)

Another student also shared his experience in using multimedia in learning English. Another English teacher has invited the students to watch different movie trailers to learn about movie genres. After watching the movie trailers, students need to categorize the movies into different genres in the exercise.

- Games
Game-based learning is being adopted in the Mathematics lesson. One of the interviewed students shared that the teacher has started a Mathematics competition by playing an iPad game. Students will need to solve different Mathematics questions to score and win the game. He enjoys this way of learning very much as he would like to
get a higher score and win the competition. He mentioned that having such competition and competing with their peers are more interesting than just doing exercises on his own. *(Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)*. Moreover, the other interviewed students also shared their experiences in when they will use iPads in learning Mathematics: the teacher uses the iPad game as a revision tool; each student will be given an iPad after learning a chapter of Mathematics theories and concepts, and the iPad game provides an opportunity for them to revise what they have learnt in the last chapter and apply their knowledge in solving the problems in the game. *(Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)*

### Web platform

The interviewed students shared their experiences in using an e-Learning platform called Schoology in the subject of Liberal Studies. They will first watch videos on different topics followed by a discussion with the teacher in class. For one of the interviewed students, he and his classmates recently watched videos about obesity, and they discuss the causes and effects of this growing social phenomenon with teachers and peers in class. He also shared that there are a number of videos for students to watch on this platform, and to secondary school students like him, videos are more attractive.

Some interviewed students recalled using another web-based platform called ECONSCHOOL ([http://www.econschool.com/econsch/econ/](http://www.econschool.com/econsch/econ/)) when they were studying Economics in Secondary Four. There are past papers, multiple-choice exercises, and latest newspaper updates available on the platform. One of the interviewed students recalled that his teacher would suggest the students to do the exercises on the platform during summer holiday but it is not mandatory. He thinks that this platform is useful as it is convenient for them to access all past papers on one platform. He also thinks that it is very environmentally friendly as the teacher does not need to print out all the past papers for the students.

**How teachers used the e-Learning platform in teaching:**

In this project, an e-Learning platform was built and used in Character Education. Students first watched videos about the stories of Hong Kong Spirit Ambassadors (精神大使) followed by a class discussion on the core values and spirits demonstrated by the Ambassadors. One of the interviewed students recalled that they usually have the lesson in a computer room and they will type their views and comments in a text box
on the e-Learning platform. Their teacher can immediately read the students’ comments submitted and discuss with them in class. She also shared that it is easy and convenient to type out her views compared to writing them down on paper.

Questions:

1. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude? (你認為電子學習的系統或者參與的項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？)

One of the interviewed students shared that the most important part of the e-Learning platform is personalization. (Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate) In the e-Learning platform she used before, she is able to personalize the platform with her favourite colour and graphics, and she enjoys using the platform for her learning. In addition, she also shared that there is a section on the e-Learning platform where she can click and view the submitted work by other students. She finds this very useful as she can learn from other peers whose work has better sentence structures and examples suggested. (Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)

Another student shared that the most important part of the e-Learning platform is the interactivity. To him, games and having a scoring board are very attractive. (Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate) He thinks that to secondary school students, they will soon loose incentives to learn if it is too boring. However, if they can participate in a competition and apply their learning in the game, it is more fun and interesting. Thus, they will have a higher incentive to learn. Moreover, the intense atmosphere during the competition engages students to participate.

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude?

The question has not been asked in the interview.

3. What’s the impact of using e-Learning for your learning?
The question has not been asked in the interview.

4. **Do you think the use of e-Learning help you in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills?** (你認為電子學習對於以下方面對你有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

On creativity, one of the interviewed students shared that using a design software helps to generate creative ideas and articulate ideas. He thinks that he cannot draw the shape of an apple nicely on an art paper and it is very discouraging. However, with design software such as Photoshop, he can use different tools to draw and express his own ideas. Moreover, he also shared that using e-Learning platforms/tools helped him to build problem-solving skills. He mentioned that he stays particularly focused when he has the chance using iPad games to solve the Mathematical questions with his peers. *(Notes for research team: the perceived impact on the theme by using e-Learning, i.e. self-directed learning with emphasis of creativity, collaboration, problem solving and computational thinking skills)*

On self-directed learning, a student shared her experience of becoming more eager and interested in searching new information. She said that with technology, she can search for information on a computer or her mobile phone when she has questions. In a traditional classroom, she cannot use her mobile phone and search for information when she does not understand a term/word mentioned by the teacher, and she feels lost in class.

**For students with lower motivation, do you think e-Learning can help them?**
The interviewed students all agree that e-Learning can motivate students who lack interest or with lower motivation. They think that computers are more interesting than books to a secondary school student. They also think that being able to use computer can motivate the students and help them to stay focused in class.

**Do you think the students will be distracted while using computer/iPads in e-Learning?**
No, the interviewed students shared that their teachers are able to monitor all students’ computers in class. For students’ iPads, they are locked and can only browse specific websites.

5. What do you think are the success factors for an e-Learning project?
6. What would motivate you to participate an e-Learning project?

The question has not been asked in the interview.

7. What would you suggest to the teachers about the use of e-Learning?

One of the interviewed students suggests a higher interactivity in e-Learning activities increases their engagement in class.

What’s the impact of using e-Learning for your learning?

One student shared that e-Learning is more interesting which makes her more eager to learn. She likes the fact that she can easily access the e-Learning materials and related information with her mobile phone while commuting or anytime she wants.

(Notes for research team: the success factors from students’ views for an e-Learning project, the motivation for them to participate)

However, another interviewed students shared that they will be easily distracted by notifications from other applications if they use their mobile phones for their learning.

Teachers interview on students learning

Project: Building up a Community Network for Fostering Character Education

Date & Time: 13th September, 2016, 5-6pm

Venue: Lok Sin Tong Young Ko Hsiao Lin Secondary School

Interviewer: Dr. Laura Zhou, Ms. Sharon Keung

Interviewees: Ms. Wong, Mr. Lai, Mr. Lai, Ms. Kwok

E-Learning platforms used before in this project:
- iLap
- Mahara

E-Learning platform currently using:
- Schoology

Questions:
1. What is/are the most attractive elements of the use of e-Learning?
The question has not been asked in the interview.

2. **What do you think are the most important parts of the e-Learning? E.g., functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude?** (你認為電子學習系統和項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？)

One of the teachers thinks compatibility of the platform is the most important. 

*(Notes for research team)* He mentioned that there are more and more new apps in the market, and it is crucial for the platform to have a high compatibility so that he can embed links or any other new apps in future.

3. **What’s the impact of using e-Learning for students’ learning?** (你覺得電子學習對於學生的學習有哪些幫助與影響？)

The interviewed project leader shared the experience in using the e-Learning platform in fostering Character Education. There are around five to six lessons using the platform with the students in a school year and each lesson has different teaching focus.

- **First lesson:** A topic and a scope will be given to the students. The teacher will also guide the students on how to find related news within the scope for later discussions. The students have the freedom to choose different news clips/stories for the topic which they are interested in, and upload them on the platform.
- **Second lesson:** The teacher will guide the students to review the resources they found and teach them how to analyze.
- **Third lesson:** The students will analyze and write their comments on the stories/news clips, and upload on the e-Learning platform.

As a result of using the e-Learning platform for Character Education, different stories will be uploaded on the platform and the students are able to share their work with peers. Without the e-Learning platform, teachers and students will rely on paper-based learning materials. Teacher will need to prepare the learning materials, and discussions will be limited on the paper-based materials. With computers and the e-Learning platform, students have the freedom to choose stories they are interested in. As a result, there are rich learning resources on the platform with more students uploading their work on the platform.

*From a teacher perspective, what’s the biggest impact of using e-Learning to students?*
One of the interviewed teachers shared that the biggest impact is to increases students’ learning motives. (Notes for research team) For instance, in the Secondary One Geography lesson, each student will be given an iPad. They will use Google Map in learning different landscapes from a bird’s eye view. She also mentioned that PowerPoint is also a possible e-Learning tool which teachers can use but it is a non-interactive resource compared to iPad. The students are more excited in using the iPad to learn.

Another teacher shared that it is faster and more convenient for him to give feedback to students. He can immediately give feedback and discuss with the students if there is any mistakes. For paper-based assignments, it may take him a week to review and comment before giving back to the students. (Notes for research team)

He also shared his future plan of using e-Learning in his English lessons. He plans to ask the students to prepare learning materials by creating video (using the Smart Video software), and embed with their own audio recordings. This arrangement also matches the Secondary Three TSA requirement on individual presentation. He also mentioned that students usually work harder on these e-assignments as they know their work will be shared and viewed by their peers, and thus increasing their learning motives.

**Using e-Learning outside classroom**
Sometimes the teachers will ask the students to watch videos on Schoology and search for information at home, and have discussions in class. Moreover, some assignments need to be submitted online.

### 4. Do you think the use of e-Learning help your students in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills? (你認為電子學習對於以下方面對你的學生有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

The project leader shared her view towards the use of e-Learning in the project they applied. In their project, it is mainly about Character Education. E-Learning to them is one way of teaching in achieving the goal of fostering Character Education. Before using e-Learning, there were class teacher’s sessions and sharing talks on character education. The project leader and her team see e-Learning as a breakthrough, a new method in fostering Character Education. She thinks that using e-Learning helps to engage students and encourages sharing among peers.
Another interviewed teacher also shared his view towards the use of e-Learning. He thinks that the use of e-Learning helps improving student computer literacy, and familiarize them with computer skills for future use.

5. What do you think are the success factors for an e-Learning project?
   The question has not been asked in the interview.

6. What would motivate you to participate an e-Learning project?
   The question has not been asked in the interview.

7. What are the biggest challenges and/or difficulties when doing e-Learning development, implementation and/or participation?
   （在進行電子學習的開發，實踐或者參與中，你遇到的最大的困難和挑戰是什麼？）
   The biggest challenge is the sustainability and the maintenance of the e-Learning platform. (Notes for research team) The interviewed teachers who helped in the process of e-Learning development shared that the school used a platform called iLap before. In the beginning, they have enough server space to use but soon they do not. From a school’s perspective, it is expensive for them to purchase more server space. Moreover, IT support at the school is limited; they may not have enough time and skills to maintain the platform as some members of the support team have teaching duties as well.

   For the interviewed school, it is difficult for them to maintain iLap, and therefore they have changed to use Schoology. However, they mentioned that the school actually prefer to use iLap. They think that the functions of iLap are more suitable with the assessment function (teacher assessment and peer assessment) and a personalized user interface. Schoology currently does not support these two functions.
Part 3: Interview Report at Sam Shui Natives Association Lau Pun Cheung School

Students Interview

Project: Mutual Active Learning System for Students with Dyslexia – Starwish Digital Language Laboratory

Date & Time: 21st November, 2016, 2-230pm

Venue: Sam Shui Natives Association Lau Pun Cheung School

Interviewer: Dr. Laura Zhou, Ms. Sharon Keung

Interviewees: 2 students; 1 female and 1 male

E-Learning tools/platforms in used:

Used the e-Learning tools/platforms during break and in class as well

- Mutual Active Learning System for Students with Dyslexia – Starwish Digital Language Laboratory (星願小王子) (Web version)
- 星願外傳 (Web version)
- 星願歷奇 (Web version)
- 星夜重圓 (app version)
- Rainbow One

Questions:

1. **What is/are the most attractive elements of the use of e-Learning?**

   (在把電子學習運用於學習中，哪些方面你認為最有吸引力？)

   One of the students shared that one of her favorite games is Literal Maze (文字迷宮). This game is to learn about sentence structure (句子結構遊戲). The student shared that she likes to play this game because it helps to improve her thinking ability and learn about the sentence structure of Chinese. *(Notes for the research team: examples - the motivation for them to participate)*

   Another game she shared is Words in Clouds (字在雲中尋). This game is to learn about grapheme structure (字形結構遊戲).

   Another interviewed student shared his favorite game with us, The Reflection Pond (明鏡照天詞). He shared that the question will show a theme, such as
“Spring Weather”, then he will select appropriate words as the answer (找字遊 戲). He likes it because the game helps to enhance his memory ability, memorizing the Chinese words.

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude?
(你認為電子學習的系統或者參與的項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？)
The question has not been asked in the interview.

3. **What’s the impact of using e-Learning for your learning?**
(你覺得電子學習對於你的學習有哪些幫助與影響？)
One of the students shared that they usually play the games during recess or after school. In Chinese Language Learning, they learnt about Chinese sentence structure and Chinese characters (中文重組句子和中文字) through playing the game. Sometimes, they will use iPad and login the e-Learning platform (Rainbow One) (*Notes for the research team*) to learn and complete exercise. For instance, in Mathematics lesson, they once used the camera in iPad to take a photo of the floor brick in order to capture vertical lines in learning different angles such as acute angle, obtuse angle and right angle (銳角, 鈍角, 直角). They first took a picture of the floor bricks at the school playground or classroom, then submit to the e-Learning platform (i.e. Rainbow One) (*Notes for research team*). Teacher display students’ work on the screen and invite students to come out and explain which is acute/ obtuse/ right angle. In such way, teachers are able to check students’ understanding on learning the angles. Students can also view their peers’ submission on the platform.
### Teachers interview on students learning

**Project:** Mutual Active Learning System for Students with Dyslexia – Starwish Digital Language Laboratory  
**Date & Time:** 21st November, 2016, 230-4pm  
**Venue:** Sam Shui Natives Association Lau Pun Cheung School  
**Interviewer:** Dr. Laura Zhou, Ms. Sharon Keung  
**Interviewees:** Vice-principal and 1 teacher

The school has 200 students, sharing 120 iPads.

### E-Learning platforms in use:

Starwish Digital Language Laboratory focuses mainly in language subjects. As for Rainbow One, it aims at collaborative learning, self-learning and flipped classroom (協作學習、自主學習、反轉教室). Students will use iPads during lesson and collaborate with peers and teachers in learning. Moreover, Rainbow One also assists teachers to tailor-made teaching materials for their students and also enabling teachers to share their teaching resources with colleagues. Teachers can simply import existing teaching materials in Word/PPT/PDF formats to Rainbow One and insert interactive elements, such as teachers can add a camera function for students to take pictures for assignments.

Furthermore, there are currently no e-books available for students with intellectual disability in Hong Kong. Therefore, the school has collaborated with Open Knowledge Association (知識共享協會) in creating around 600 e-books free for teachers and students with intellectual disability to use. These books are co-created by three SEN schools, The Education University of Hong Kong and individual consultants, following the EDB curriculum for students with intellectual disability.

A new e-Learning platform is under development. It is the Rainbow Star which extends Rainbow One with assessment function. Teachers can select which assignments/exercise as assessment. Student performance in the assignments/exercise will be recorded and assessed, and later easily generating students’ transcript.

### Questions:

1. **What do you think are the most important parts of the e-Learning? E.g., functionality? User-friendly, contents, personalization, multi-media.**
Interactivity, collaborative nature, teacher’s attitude?

（你認為電子學習系統和項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？）

Interactivity:
Camera function helps to increase the interactivity with students. For instance, in one of the chapters about the phases of the moon, students used the camera on iPad to take photos of the moon and submit to the e-Learning platform. Teacher then displayed students’ work in class and turned out the students captured different phases of the moon and their work can be shared with their peers.

Functionality:
Passage reading software (發聱系統) reads aloud the passages in the e-books. The passage reading software in Rainbow One supports Cantonese and Putonghua, and students can also adjust the pace of the reading. On one hand, this helps students to review the whole passage and learn through listening. On the other hand, it saves teacher’s time in recording.

Stroke order (筆順) function and exercise are also available in Rainbow One. Students can click any words they want and watch the display of stroke order of the Chinese characters for self-learning and revision at home, or sometimes teachers will invite students to complete the exercise during class depends on the time. The stroke order tool can detect students’ stroke order writing in the exercise, and will pop up a reminder of the next correct stroke if students write it incorrectly. A dictionary is also embedded in the system for students to learn about words they do not understand (詞解).

Linkage to website (with teachers providing specific Google search keywords)
Teachers can embed website links and search result in the e-books but with the specific Google search keywords. The teachers check the keywords and the generated google search results first before including in the e-books in order to filter search results and enhance students safe search experience.
The interviewed teacher also shared that auto-correction function for exercise such as MC questions is an important function in an e-Learning system. Not only it saves teachers’ time in correcting simple questions, students can also get immediate feedback and the correct answer after completing the exercise at home.

The vice-principal shared that it is important for the system to be user-friendly and time-saving. For instance, Rainbow One has various easy-to-use tools for teachers to embed in the teaching materials (some tools can be easily drag-and-drop to the teaching materials on the platform), increasing the interactivity of the exercise and learning materials. Moreover, it is also important for the system to support different formats. For instance, teachers at their school can easily import existing teaching materials in PDF/Word to Rainbow One and generate an interactive format.

**Personalization:**
To cater different students’ needs, there is a “Tip” function (小錦囊) which can be embedded in the e-books. *(Notes for research team)* For high-ability students, they can click the ‘Tip” tool and watch more additional information for self-learning. For instance, in learning the phrases of the moon, the “Tip” function includes a passage of a Chinese legend (嫦娥奔月) for students’ extra information and self-learning.

2. **What’s the impact of using e-Learning for your learning?**
   *(你覺得電子學習對於學生的學習有哪些幫助與影響？)*

Starwish Digital Language Laboratory:
- Increases students’ interest in learning (its games)
- Multi-sensory training through playing the games, such as to train visual tracking and visual exploration (視覺追蹤、視覺探索), hearing ability, and to increase attention span.

Rainbow One:
- Students’ performance in doing the assignments/exercise will be recorded and the data will be analyzed, then teachers can adjust their teaching strategy accordingly
Achieving flipped classroom as this e-Learning platform is cross platform (Web and tablets); students can prepare for the lesson at home and continue to self-learn after class.

3. **Do you think the use of e-Learning help your students in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills?**

(你認為電子學習對於以下方面對你的學生有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

**Self-directed learning** - YES (both Starwish and Rainbow One)

**Creativity:** examples below.

- e.g. students can add photos/recordings/mind map in a slide (簡報框) in in-class exercise/homework.
- e.g. In Visual Art lessons, students take a selfie and drag-and-drop a transparent overlay to the selfie. Then they can follow the outline of their face to draw a picture of themselves.

4. **What do you think are the success factors for an e-Learning project?** (你認為哪些是一個電子學習項目成功的因素？)

The question has not been asked in the interview.

5. **What would motivate you to participate an e-Learning project?** (你認為哪些因素令你很有興趣參加電子學習的項目？)

The question has not been asked in the interview.

6. **What are the biggest challenges and/or difficulties when doing e-Learning development, implementation and/or participation?**

(在進行電子學習的開發，實踐或者參與中，你遇到的最大的困難和挑戰是什麼？)

Some colleagues may be reluctant to use e-Learning in their teaching as they might not have the confidence in using the e-Learning tools in teaching.
7. **How to sustain an e-Learning project?**

   （你能給如何持續性的發展電子學習項目提一些建議嗎？）

   It is better to enhance the collaboration between schools, NGOs and companies in sustaining the e-Learning tools/platforms. Moreover, it may be better for the school/NGO to hold the copy-right of the tools/platform for future development of the tools/platforms. *(Notes for research team)*

8. **What would you suggest about the use of e-Learning?** （你對如何更好的利用電子學習幫助教學可否給一些建議？）

   It is suggested that teachers are encouraged to share their teaching materials. With more teachers to share, the resources database will continue to grow.
Part 4: Interview Report at Chi Hong Primary School

Students Interview

Project: The Youth of Creative Media Education
Date & Time: 30th November, 2016, 2pm – 245pm
Venue: Chi Hong Primary School
Interviewer: Dr. Laura Zhou, Ms. Sharon Keung
Interviewees: 4 Primary 5 students; 2 male, 2 female

E-Learning tools/platforms in use:

- **The Youth of Creative Media Education (e-Learning tool used before)**
  The interviewed students shared that this e-Learning tool is quite difficult for them to use. They used YCME when they were Primary 1 and 2. Also, they faced a number of technical issues when they used this e-Learning tool.

- **Kahoot! (e-Learning tool using in English lessons now)**
  The interviewed students shared that they sometimes used the e-Learning tool Kahoot in English lessons. Their English teacher first asked them to identify the English words in a passage that they do not understand and look up in a dictionary as a home assignment. In class, the teacher divided students in groups of 2 and played Kahoot. To score in the Kahoot game, the students needed to understand the meaning of the words and to identify the correct English words for the questions. *(Notes for the research team: examples - the motivation for them to participate)* The teacher usually played the game with the class for around 15 minutes.

One of the students shared that to ensure every student has completed the home assignment, the teacher sometimes asked a group leader to check their textbook or the teacher would check them herself. He also shared that in the beginning, some students did not look up the new words in a dictionary. However, once they started playing the game, these students knew that they would not be able to answer the questions correctly and score. He said that the Kahoot game really helps to motivate the students to look up the new words as they would like to get a higher score in the game. *(Notes for the research team: examples - the
The students with the highest score would get a prize from the teacher, e.g. stationary or snacks.

Another student shared that it is nice that they paired with their peers in playing the game. If they played the game individually, they feel like they cannot ask their peers if they do not know the answer as it is a competition. *(Notes for the research team: Success factors from students’ views for an e-Learning project, the motivation for them to participate)* However, for groups of 2, they can discuss with their groupmates and score together. Not only they can learn the new English words, it also helps to build up their team spirit.

- **Tinkercad (Creating 3D digital designs with online CAD)**
  The students used this e-Learning tool in computer lessons/at home in learning two-dimensional and three-dimensional concepts and shapes. The teacher would select some of the excellent work, i.e. three-dimensional models and print them out with a 3D printer. The interviewed students shared that they feel very satisfied in learning with this e-Learning tool and building their own 3D models.

- **Lego Movie**
  The interviewed students demonstrated how they use an e-Learning tool, Lego Movie in creating their own cartoon. They shared that they used this e-Learning tool in computer lessons and Visual Arts lessons, learning how to build a story such as brainstorming ideas for the story setting. Comparing with YCME, they enjoyed using Lego Movie more.

**Other e-Learning experience:**

- **In General Studies lessons**
  The interviewed students also shared their other e-Learning experience of using the internet to search for information for their assignments. The General Studies teacher distributed the worksheet as homework. The students then needed to search for information at home and stored found information in a USB and uploaded the information at school. Some of the students would be invited to share the information in front of the class.
Questions:

1. What is/are the most attractive elements of the use of e-Learning? (在把電子學習運用於學習中，哪些方面你認為最有吸引力？)

   The question has not been asked in the interview.

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude? (你認為電子學習的系統或者參與的項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與指導？)

   Functionality (系統的功能) – the interviewed students think that it is most important for the e-Learning tool to be user-friendly and easy-to-use, including the save and export function which they can export their work to their tablets. (Notes for the research team: Success factors from students’ views for an e-Learning project) Having multi-media such as video for them to watch is fun and important as well.

3. What’s the impact of using e-Learning for your learning? (你覺得電子學習對於你的學習有哪些幫助與影響？)

   The interviewed students shared that it is more fun in using e-Learning tools for their learning. With games, they do not feel bored in learning new knowledge. One of the male students shared that he particularly enjoyed the games with different levels and the higher level he achieved, the more satisfied he felt. (Notes for the research team: Success factors from students’ views for an e-Learning project)

4. Do you think the use of e-Learning help you in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills? (你認為電子學習對於以下方面對你有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)

   Creativity (創造力): One of the students shared that the learning experience of using the e-Learning tool equips them with new skills, and this learning process motivates and inspires them to try further.
Problem solving skills (解決問題的能力): One of the students shared that he often searches for information from the internet such as online forums. One of the students shared that she will browse the internet when she finds something interesting in a book she is reading.

5. What do you think are the success factors for an e-Learning project? (你認為哪些是一個電子學習項目成功的因素？)

The question has not been asked in the interview.

6. What would motivate you to participate an e-Learning project? (你認為哪些因素令你很有興趣參加電子學習？)

The question has not been asked in the interview.

7. What would you suggest to the teachers about the use of e-Learning? (你可否給老師們一些建議如何更好的利用電子學習幫助同學們的學習？)

The students would like to try using e-books in learning.

Teachers interview on students learning

Project: The Youth of Creative Media Education
Date & Time: 30th November, 2016, 245pm – 330pm
Venue: Chi Hong Primary School
Interviewer: Dr. Laura Zhou, Ms. Sharon Keung
Interviewees: Ms. Lau, Ms. Wong, Mr. Yao, Mr. Sze, Mr. Ho

E-Learning tools/platforms using:

YCME – The school developed this e-Learning system for a cross-disciplinary curriculum; Visual Arts teachers and Computer Studies teachers collaborated together in guiding students in creating their own animations using this e-Learning system. For instance, in Visual Arts lesson, the students were first divided into groups in creating ocean-themed animations. Some students were responsible for drawing the ocean background, some were responsible for drawing various sea creatures such as mermaids. Then in Computer lessons, their drawings would be scanned and added to their animations. Sometimes they would collaborate with Chinese Language and
Music teachers, and students would add some Chinese sentences and background music for their animations.

Questions:

1. What is/are the most attractive elements of the use of e-Learning?
   (在把電子學習運用於教學中，哪些方面你認為最有吸引力？)
   The question has not been asked in the interview.

2. What do you think are the most important parts of the e-Learning? E.g. functionality? User-friendly, contents, personalization, multi-media, interactivity, collaborative nature, teacher’s attitude?
   (你認為電子學習系統和項目，哪些是最重要的？比如說：系統的功能，系統界面吸引，內容豐富，可以個人化功能和學習進度，多媒體，互動性，可以與同學合作，老師的積極參與與引導？)
   Interactivity (互動性): Students can share their own work and view their peers’ work and comment.
   Personalization (可以個人化功能和學習進度): YCME helps to support different students with different learning abilities; for those with higher ability, they can draw and create their own animations all by themselves; while for those with lower ability, they can find photos or ready-made clip arts from the internet and add them to their animations.

3. What’s the impact of using e-Learning for your learning?
   (你覺得電子學習對於學生的學習有哪些幫助與影響？)
   The teacher observed that using YCME to create animations helps to boost the learning motives and confidence of students. Moreover, using this e-Learning system helps students to develop their story-building and communication skills as animation combines story building, colour matching, voice-overs.

4. Do you think the use of e-Learning help your students in the following aspects: self-directed learning, creativity, collaboration, problem solving and computational thinking skills?
   (你認為電子學習對於以下方面對你的學生有幫助麼？自主學習，創造力，合作能力，解決問題的能力，計算思維能力？)
   Problem solving (解決問題的能力): One of the interviewed teachers shared that some students wanted to create some special effects for their animations
and did not know how to create these effects. For instance, one of the students wanted his characters to fly in the background and the teacher would asked the student some guiding questions and let the student to figure out which tool he can use in order to create the flying effect. In this process, the role of the teacher is to guide the students and the students solved the problem themselves. *(Notes for research team)*

Self-directed learning (自主學習): The English teacher has used Kahoot to increase students’ interests in learning English. Her goal is to develop students’ reading skills and she used games to attract students to look up new words in a dictionary. *(Notes for research team)* She also shared a useful skills in training her students to be less careless in reading questions by choosing answers with similar spellings.

5. **What do you think are the success factors for an e-Learning project?**
   *(你認為哪些是一個電子學習項目成功的因素？)*

One of the interviewed teachers think that with technological advancements, tools can easily be replaced but the learning objective is the most important. Also, the interviewed teachers think that hardware support such as Wi-Fi support is important as well.

6. **What would motivate you to participate an e-Learning project?**
   *(你認為哪些因素令你很有興趣參加電子學習的項目？)*

The question has not been asked in the interview.

7. **What are the biggest challenges and/or difficulties when doing e-Learning development, implementation and/or participation?**
   *(在進行電子學習的開發，實踐或者參與中，你遇到的最大的困難和挑戰是什麼？)*

The idea of developing the e-Learning system, YCME comes from Flash used in Secondary schools. One of the teachers who was involved in developing YCME shared that the development team thought that Flash is too difficult for Primary school students, and therefore they would like to develop an e-Learning system that is suitable for Primary school students in creating animation. Also, Flash is too expensive for the students. YCME is a web-based e-Learning system which allows students to log on the system easily. Furthermore, one of their goals is to promote such tool to all Primary schools in Hong Kong. In the early stage, they faced great technical difficulties in developing YCME and
therefore they chose to contact some commercial organizations in developing the e-Learning system. However, they faced great difficulty in negotiating and collaborating with commercial organizations in terms of copy-right issues, technical support issues. *(Notes for research team)*

The teachers also shared their difficulties in using YCME in lessons. The Visual Arts teacher mentioned that sometimes they faced technical issues in exporting students’ animation. Moreover, teachers also need to pay attention and screen out the students’ comments on their peers work published on the e-Learning system. This also increased teachers’ workload.

8. **How to sustain an e-Learning project?**
(你能給如何持續性的發展電子學習項目提一些建議嗎？)

The interviewed teacher suggested that perhaps EDB can involve in the project and support the teachers in negotiating with the commercial organizations.

9. **What would you suggest about the use of e-Learning?** （你對如何更好的利用電子學習幫助教學可否給一些建議？）

The question has not been asked in the interview.
Appendix F - Phase 2 Study: Survey Data Analysis Report

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A. Number of survey respondents

There are a total of 108 survey respondents from the three interviewed schools in Phase 2. 60 are teachers and 48 are students. Table 1 shows the breakdown of the total number of survey respondents.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>60</td>
</tr>
<tr>
<td>Student</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>

Table 1: The total number of survey respondents

B. Data analysis on the General Teachers Survey on e-Learning

1. Demographic of the teacher respondents

   ![](Q3.png)

   Figure 1: The number of years that teacher respondents have been teaching
Q4. Average time teachers spend on using a computer/internet per day (n=60)

- Less than 1 hr: 7%
- 1-3 hrs: 44%
- 4-9 hrs: 43%
- More than 9 hrs: 3%
- Missing data: 3%

Figure 2: Average time the teacher respondents spend on using a computer/internet per day

Q5. Average time teachers spend on using a computer/internet for their teaching per day (n=60)

- Less than 1 hr: 18%
- 1-3 hrs: 59%
- 4-9 hrs: 20%
- More than 9 hrs: 0%
- Missing data: 3%

Figure 3: Average time the teacher respondents spend on using a computer/internet for their teaching per day
2. Teachers’ view of success criteria of e-Learning projects for student learning

Following the multi-dimensional model suggested in the Research Framework, the surveys are planned to collect data from students and teachers involved in e-Learning projects and identify the criterion which teachers think are significant to the success and quality of an e-Learning project. The criteria are technical quality, content quality, teacher supporting students’ learning (teacher’s attitude), students’ attitude and supportive issues. Based on the statistical analysis, it is found that the teacher respondents value the content quality as the most important criterion of an e-Learning project (Mean=4.07). Besides the content quality, the technical quality is also valued as an important criterion of an e-Learning project (Mean=3.96).

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical quality</td>
<td>3.96</td>
</tr>
<tr>
<td>Content quality</td>
<td>4.07</td>
</tr>
<tr>
<td>Teacher supporting students’ learning</td>
<td>3.90</td>
</tr>
<tr>
<td>Student’s attitude</td>
<td>3.95</td>
</tr>
<tr>
<td>Supportive Issues</td>
<td>3.81</td>
</tr>
</tbody>
</table>

Table 2: Teachers’ view of success criteria of e-Learning projects for student learning

Figure 4: The number of times the teacher respondent use an e-Learning system for their teaching per month
3. Teachers’ view of success factors of e-Learning projects for student learning

To further investigate and identify the success factors that have significant impact on the success and quality of e-Learning, statistical analysis have been conducted on ratings the teacher respondents gave to each survey question. Five factors with the higher ratings have been identified. Teacher respondents think that to better facilitate student learning in an e-Learning project, it is most important to include up-to-date content, supporting materials, web-links with real-life examples (Mean=4.18 and M=4.10). Moreover, three more factors have been identified as success factors of e-Learning projects for student learning:

i) Fonts (styles, color, and saturation) in the system should be easy to read in both on-screen and in printed versions (M=4.12);

ii) the e-Learning system should use vocabulary and terminology that are easy for students to understand and follow (M=4.08); and

iii) the quality of the learning materials in the system such as attractiveness and motivation is essential (M=4.08).

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Mean (=&gt;4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q12. Fonts (styles, color, and saturation) in the system should be easy to read</td>
<td>4.12</td>
</tr>
<tr>
<td>in both on-screen and in printed versions.</td>
<td></td>
</tr>
<tr>
<td>Q14. Good system’s graphical user interface is essential.</td>
<td>4.00</td>
</tr>
<tr>
<td>Q17. Interactivity of the system is essential.</td>
<td>4.03</td>
</tr>
<tr>
<td>Q18. Learning materials should be supported by multimedia tools (e.g. pictures,</td>
<td>4.03</td>
</tr>
<tr>
<td>animations, simulations, videos, audios, etc.).</td>
<td></td>
</tr>
<tr>
<td>Q19. The quality of the learning materials in the system such as attractiveness</td>
<td>4.08</td>
</tr>
<tr>
<td>and motivation is essential.</td>
<td></td>
</tr>
<tr>
<td>Q20. Clear explanation of learning tasks is essential.</td>
<td>4.07</td>
</tr>
<tr>
<td>Q21. The system should use vocabulary and terminology that are easy for</td>
<td>4.08</td>
</tr>
<tr>
<td>students to understand and follow.</td>
<td></td>
</tr>
<tr>
<td>Q23. The content should be up-to-date.</td>
<td>4.10</td>
</tr>
<tr>
<td>Q24. Supporting materials, web-links and given examples should be up-to-date</td>
<td>4.18</td>
</tr>
<tr>
<td>and real-life examples.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Teachers’ view of success factors of e-Learning projects for student learning
C. Data analysis on the General Students Survey on e-Learning

1. Demographic of the students respondents

![Figure 5: The number of female and male student respondents](image-url)

![Figure 6: The average time the student respondents spend on using a computer/internet per day](image-url)
2. **Students’ view of success criteria of e-Learning projects for student learning**

Based on the statistical analysis, it is shown that the student respondents have a positive perception towards using IT in their learning (M=4.24). Moreover, the technical quality of an e-Learning project is rated as the important criterion (M=4.23).
Table 4: Students’ view of success criteria of e-Learning projects for student learning

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall perception of e-Learning</td>
<td>4.24</td>
</tr>
<tr>
<td>Technical quality</td>
<td>4.23</td>
</tr>
<tr>
<td>Content quality</td>
<td>4.20</td>
</tr>
<tr>
<td>Teacher’s supporting</td>
<td>4.16</td>
</tr>
</tbody>
</table>

3. Students’ view of success factors of e-Learning projects for student learning

The student respondents gave a high rating to questions 12 to 42 (Mean=>4). To identify the success factors of e-Learning projects for student learning, 5 questions with the highest rating (Mean=>4.3) are extracted. The student respondents think that it is important for the fonts of the e-Learning system to be easy to read as well as the navigation (Mean=4.42 and Mean = 4.35) for their better learning. Moreover, they think that the e-Learning system should have be clear and organized for them to search for information and with multimedia learning materials in the system. (Mean=4.31).

<table>
<thead>
<tr>
<th>Survey question</th>
<th>Mean (=&gt;4.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 12. Navigation of the system should be easy. 一個電子學習系統應該容易操作。</td>
<td>4.35</td>
</tr>
<tr>
<td>Q 13. It should be easy for me to find what I want easily in the system. 電子學習系統的設計應該讓我在系統中容易地找到資料。</td>
<td>4.31</td>
</tr>
<tr>
<td>Q 14. Fonts (styles, color, and saturation) should be easy to read in both on-screen and in printed versions. 不論在網頁上，還是在紙面上，一個電子學習系統的字體（字型、顏色、飽滿度）都應該清晰可閱。</td>
<td>4.42</td>
</tr>
<tr>
<td>Q 20. Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.).電子學習系統上應有不同的多媒體電子教材輔助學習，如圖片、動畫、模擬的學習遊戲、影片和聲音等。</td>
<td>4.31</td>
</tr>
<tr>
<td>Q 34. The teacher should fix all the errors and mistakes in the materials on the system. 老師應該在系統上更改學習材料中錯誤的地方。</td>
<td>4.36</td>
</tr>
</tbody>
</table>

Table 5: Students’ view of success factors of e-Learning projects for student learning
Appendix G - Phase 2 Study: Survey Questions (Teachers and Students)

Consolidation and Redevelopment Work on Information Technology (IT) in Education, Quality Education Fund (QEF)

Phase 2 Study – General Teachers Survey on e-Learning

Thank you for agreeing to take part in this survey conducted by the Department of Computing, The Hong Kong Polytechnic University. The aim of this survey is to measure teachers’ view towards e-Learning. The information collected in this questionnaire will only be used for research purposes and be assured that all answers you provided will be kept in the strictest confidentiality. Thank you for your cooperation.

Part 1: Demographic questions

1. Project participated: __________________________________________________________

2. Your school: ________________________________________________________________

3. The number of years you have been teaching: ________________________________________________

4. Average time you spend on using a computer/internet per day:
   a. Less than 1hr
   b. 1 – 3hr(s)
   c. 4 – 9hrs
   d. More than 9hrs

5. Average time you spend on using a computer/internet for your teaching per day
   b. Less than 1hr
   c. 1 – 3hr(s)
   d. 4 – 9hrs
   e. More than 9 hrs

6. How many times did you use the system for your teaching per month?
a. Never use
b. 1 – 2 times
c. 3 – 5 times
d. 6 – 14 times
e. More than 15 times per month

Part 2: Overall perception
Please circle the number that best describes your overall perception towards the e-Learning system.

<table>
<thead>
<tr>
<th>Perception towards the e-Learning</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. The use of e-Learning is helpful for my teaching.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8. I need to spend more time in using the system when compared with my usual teaching method(s).</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. E-Learning is helpful for my professional development.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. e-Learning makes my students more effective in learning the materials.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 3: Technical quality
Please circle the number that best describes your perception towards the technical quality of an e-Learning system.

<table>
<thead>
<tr>
<th>Technical quality</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Easy navigation of the system is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12. Fonts (styles, color, and saturation) in the system</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
should be easy to read in both on-screen and in printed versions.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. The system should be error free.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>14. Good system’s graphical user interface is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>15. Accessibility of the system (e.g. in class learning or 7 days 24 h for self-learning) is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>16. Personalized appearance (e.g. showing students’ progress, showing which chapters a particular student has to revise, etc.) is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>17. Interactivity of the system is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

**Part 4: Content quality**

Please circle the number that best describes your perception towards the content quality of an e-Learning system.

<table>
<thead>
<tr>
<th>Content quality</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.).</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>19. The quality of the learning materials in the system such as attractiveness and motivation is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20. Clear explanation of learning tasks is essential.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
21. The system should use vocabulary and terminology that are easy for students to understand and follow.

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>

22. The content should cover an appropriate degree of breadth for students.

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>

23. The content should be up-to-date.

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>

24. Supporting materials, web-links and given examples should be up-to-date and real-life examples.

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>

**Part 5: Teacher supporting student learning**

Please circle the number that best describes your perception towards how teachers support students in using e-Learning.

<table>
<thead>
<tr>
<th>Teacher Support</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Feedback from teachers to students are essential during the use of e-Learning.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>26. During the use of e-Learning, a teacher should encourage students to interact with classmates by using the system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>27. During the use of e-Learning, a teacher should actively react to any issues, e.g. updates learning materials, solve system errors.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
28. During the use of e-Learning, a teacher should keep on communicating well with students to create an online environment conductive and enjoyable for students learning.

<table>
<thead>
<tr>
<th>Perception towards the students’ attitude.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>To make the use of e-Learning more efficient, students should have a positive view toward e-Learning.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

29. A teacher should be proficient with all the contents in the course.

<table>
<thead>
<tr>
<th>Perception towards the students’ attitude.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>To make the use of e-Learning more efficient, students should have a positive view toward e-Learning.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 6: Student’s attitude
Please circle the number that best describes your perception towards the students’ attitude for effective use of an e-Learning system.

<table>
<thead>
<tr>
<th>Perception towards the students’ attitude.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system helps teacher and students to cut-down expenditure such as paper cost, communication cost (i.e., phone), transportation cost, etc.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 7: Supportive issues
Please circle the number that best describes your perception towards the supportive issues.

<table>
<thead>
<tr>
<th>Perception towards the supportive issues</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system helps teacher and students to cut-down expenditure such as paper cost, communication cost (i.e., phone), transportation cost, etc.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 8: Theme-based questions
Please circle the number that best describes your perception towards the e-Learning
<table>
<thead>
<tr>
<th>Theme-based questions</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. The use of e-Learning should enhance students’ ability of self-directed learning.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>33. The use of e-Learning should enhance students’ creativity.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>34. The use of e-Learning should enhance students’ ability of problem solving.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>35. The use of e-Learning should enhance students’ computational thinking skills.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Part 9: Open ended questions**

36. Which particular aspect(s) of the use of e-Learning did you find the most useful?

_________________________________________________________________

_________________________________________________________________

37. What changes/additions would you recommend for the use of e-Learning to make it successful?

_________________________________________________________________

_________________________________________________________________

38. Any other comments?

_________________________________________________________________
Consolidation and Redevelopment Work on Information Technology (IT) in Education, Quality Education Fund (QEF)

Phase 2 Study – General Students Survey on e-Learning

第二階段研究 – 學生對於電子學習的看法之問卷調查

Thank you for agreeing to take part in this survey conducted by the Department of Computing, The Hong Kong Polytechnic University. The aim of this survey is to measure students’ view towards e-Learning. The information collected in this questionnaire will only be used for research purposes and be assured that all answers you provided will be kept in the strictest confidentiality. Thank you for your cooperation.

感謝您參與本研究！這項研究係由香港理工大學電子計算學系所規劃與執行，旨在瞭解學生對於電子學習的看法。所有收集的資料只會用作研究用途，並嚴格保密。

Part 1: Demographic questions 第一部分: 個人資料

1. School type 學校類型: 
   (Primary/Secondary/Special): ______________________________________

2. Your school: 就讀學校: ______________________________________

3. Your grade: 就讀年級: ______________________________________

4. Your gender: 性別: ______________________________________

5. Average time you spend on using a computer/internet per day: 你每日平均使用電腦/上網的時間:  
   a. Less than 1hr 少於一小時 
   b. 1 – 3hr(s) 一至三小時 
   c. 4 – 9hrs 四至九小時 
   d. More than 9hrs 超過九小時 

6. Average time you spend on using a computer/internet for your learning per day 
   你每日平均為學習需要而使用電腦/互聯網的時間: 
   a. Less than 1hr 少於一小時 
   b. 1 – 3hr(s) 一至三小時 
   c. 4 – 9hrs 四至九小時 
   d. More than 9 hrs 超過九小時 

7. How many times did you use the system for your learning per month? 
   你每月平均為學習需要而使用該系統次數: 

240
Part 2: Overall perception of e-Learning 第二部分：電子教學整體滿意度

Please circle the number that best describes the overall perception towards e-Learning. 請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Overall perception 整體滿意度</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. The use of e-Learning is helpful for my learning. 使用電子學習有助於我的學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. I am very satisfied with the use of e-Learning. 我非常滿意使用電子教學。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. I liked using e-Learning to study. 我喜歡使用電子學習學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11. The use of e-Learning makes me more successful in learning. 電子學習能令我在學習中更有效率、更具成效。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 3: Technical quality 第三部分：技術質量

Please circle the number that best describes your perception towards the technical quality. 請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Perception towards the technical quality 對於電子學習所需的技術的看法</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Navigation of the system should be easy. 一個電子學習系統應該容易操作。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13. It should be easy for me to find what I want easily in the system. 電子學習系統的設計應該讓我在系統中容易找到資料。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14. Fonts (styles, color, and saturation) 單字（字型、色彩和飽和度）</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
should be easy to read in both on-screen and in printed versions. 不論在網頁上，還是在紙面上，一個電子學習系統的字體（字型、顏色、飽滿度）都應該清晰可閱。

15. There shouldn’t be any system errors in the system. 一個電子學習系統不應該有系統上的錯誤。

16. The system’s graphical user interface should be suitable. 一個電子學習系統的用戶介面應該要很清晰。

17. The system should be easily accessible via Internet. 電子學習的系統需要很容易透過互聯網造訪。

18. The system should provide me a personalized appearance (e.g. showing my progress, showing which chapters I have to revise, etc.) 電子學習系統上應提供個人化的用戶版面，如提供我的學習進度、提醒我需要閱讀的資料等。

19. The system should be interactive. 一個電子學習系統需要具互動性。

Part 4: Content quality 第四部分：內容質量

Please circle the number that best describes your perception towards the content quality. 請圈出你認為最合适的答案下的數字。

<table>
<thead>
<tr>
<th>Perception towards the content quality 對於電子學習中內容的質量的看法</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Learning materials should be supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.)．電子學習系統上應有不同的多媒體電子教材輔助學習，如圖片、動畫、模擬的學習遊戲、影片和聲音等。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>21. Learning materials should be attractive and motivate me to learn. 電子教材應精美吸引，從而提升我的學習興趣。</td>
<td>5</td>
<td>4</td>
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<tr>
<td>22. It should be easy to understand and</td>
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<tr>
<td>follow the instructions given by the teacher or the system. 老師的指令應該被設計得容易明白。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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</tr>
<tr>
<td>23. Learning tasks should be clearly explained. 電子教材中的學習任務應該非常清晰。</td>
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<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>24. Vocabulary and terminology used should be easy to understand and follow. 電子教材內容中的詞彙和術語應該簡單易明。</td>
<td>5</td>
<td>4</td>
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<td>2</td>
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</tr>
<tr>
<td>25. The learning objectives of the learning tasks should be stated clearly in the system. 在系統上，學習任務的目標應該清晰可見。</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<td>26. Abstract concepts (principles, formulas, rules, etc.) should be illustrated with concrete, specific examples. 抽象的概念 (如一些原理、公式或法則) 應該加上實例解釋。</td>
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<tr>
<td>29. Supporting materials, web-links and given examples should be up-to-date and real-life examples which improve my learning. 系統上的教材內容、相關的網頁連結和例子應該與時並進，並能幫助我的學習。</td>
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</tr>
</tbody>
</table>

### Part 5: Teacher’s support 第五部分: 老師的支援

Please circle the number that best describes your perception towards the teacher’s support. 請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Perception towards the teacher’s support 對於老師在電子學習中的支援的看法</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. The teacher should give me feedback to my learning. 老師應該給我學習上的回饋。</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>31. The teacher should encourage me to interact with classmates by using the</td>
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</tr>
<tr>
<td><strong>32. The teacher should follow up students’ problems and tries to find out solution.</strong> 老師應該在系統上跟進同學們在學習上遇到的問題，並嘗試找出解決方法。</td>
<td>5</td>
<td>4</td>
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<td>2</td>
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</tr>
<tr>
<td><strong>33. The teacher should frequently update learning materials.</strong> 老師應該不時更新電子學習材料。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>34. The teacher should fix all the errors and mistakes in the materials on the system.</strong> 老師應該在系統上更改學習材料中錯誤的地方。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>35. The teacher should be good at communication with students during the use of e-Learning.</strong> 老師應該善於在電子學習過程中與學生溝通。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>36. It should be easy to communicate with the teacher during the use of e-Learning.</strong> 電子學習應能讓學生與老師更易交流和溝通。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>37. The teacher should create an online environment conducive and enjoyable for learning via the system.</strong> 老師應透過電子學習系統，創造一個有利於學習的平台和一個愉快的學習環境。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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</tr>
<tr>
<td><strong>38. The teacher should be proficient with all the content used in the course.</strong> 老師需精通所有於課程中使用過的學習材料。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Part 6: Theme-based questions**

第六部分：能否發展學生各項能力的看法

Please circle the number that best describes your perception on the following items.

請圈出你認為最合適的答案下的數字。

<p>| | | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Theme-based</strong> 對於電子學習能否發展學生各項能力的看法</td>
<td>Strongly Agree 非常同意</td>
<td>Agree 同意</td>
<td>Neutral 中立</td>
<td>Disagree 不同意</td>
<td>Strongly Disagree 非常不同意</td>
</tr>
<tr>
<td><strong>39. The use of e-Learning should enhance my ability of self-directed learning.</strong> 電子學習系統應能加強我的自主學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
40. The use of e-Learning should enhance my creativity. 電子學習系統應能加強我的創意思維能力。

41. The use of e-Learning should enhance my ability of problem solving. 電子學習系統應能加強我的解難能力。

42. The use of e-Learning should enhance my computational thinking skills. 電子學習系統應能加強我的計算思維能力。

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>4</th>
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<td>41</td>
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</tbody>
</table>

**Part 7: Open ended questions 開放題**

43. Which particular aspect(s) of the use of e-Learning did you find the most useful? 你認為電子教學/此電子學習系統中的哪一幾個部分最有用?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

44. What changes/additions would you recommend for the use of e-Learning to make it successful? 你認為在電子教學/這電子學習系統有甚麼需要改進?

__________________________________________________________________
__________________________________________________________________

45. Any other comments? 請問你有其他意見嗎?

__________________________________________________________________

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Consolidation and Redevelopment Work on Information Technology (IT) in Education, Quality Education Fund (QEF)

Phase 2 Study – Students’ Satisfaction Survey

第二階段研究 – 學生使用電子學習平台的滿意度之問卷調查

Thank you for agreeing to take part in this survey conducted by the Department of Computing, The Hong Kong Polytechnic University. The aim of this survey is to measure students’ satisfaction for the e-Learning platform in used. The information collected in this questionnaire will only be used for research purposes and be assured that all answers you provided will be kept in the strictest confidentiality. Thank you for your cooperation.

感謝您參與本研究！這項研究係由香港理工大學電子計算學系所規劃與執行，旨在瞭解學生對於使用電子學習系統的滿意度。所有收集的資料只會用作研究用途，並嚴格保密。

Part 1: Demographic questions  第一部分: 個人資料

1. E-Learning system in used:  電子學習系統名稱: ______________________________________

2. Your school:  就讀學校: ______________________________________

3. Your grade:  就讀年級 ______________________________________

4. Your gender:  性別: ______________________________________

5. Average time you spend on using a computer/internet per day:  你每日平均使用電腦/上網的時間:  
   a. Less than 1hr 少於一小時
   b. 1 – 3hr(s) 一至三小時
   c. 4 – 9hrs 四至九小時
   d. More than 9hrs 超過九小時

6. Average time you spend on using a computer/internet for your learning per day  你每日平均為學習需要而使用電腦/互聯網的時間: 
   a. Less than 1hr 少於一小時
   b. 1 – 3hr(s) 一至三小時
c. 4 – 9 hrs 四至九小時  

d. More than 9 hrs 超過九小時

7. How many times did you use the system for your learning per month?  

你每月平均為學習需要而使用該系統次數：

a. Never use 從不  

b. 1 – 2 times 一至兩次  

c. 3 – 5 times 三至五次  

d. 6 – 14 times 六至十四次  

e. More than 15 times per month 每月超過十五次

**Part 2: Overall perception** 第二部分：整體滿意度

Please circle the number that best describes the overall perception towards e-Learning.  

請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Overall perception 整體滿意度</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. The use of the e-Learning system is helpful for my learning.  使用此電子學習系統有助於我的學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. I am very satisfied with the use of the e-Learning system. 我對於此電子學習系統的使用非常滿意。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. I liked using e-Learning to study. 我喜歡把電子學習應用於學習中。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11. The use of e-Learning helps my learning more effective. 運用此電子學習系統能令我</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Part 3: Technical quality 第三部分：技術質量

Please circle the number that best describes your perception towards the technical quality. 請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Perception towards the technical quality 技術質量滿意度</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. It’s easy to navigate the system. 此電子學習系統容易操作。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13. I can find what I want easily in the system. 我可以在此電子學習系統上很容易找到我想要的資料。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14. Fonts (styles, color, and saturation) are easy to read in both on-screen and in printed versions. 不論在網頁上，還是在紙面上，此電子學習系統的字體（字型、顏色、飽滿度）都清晰可閱。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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</tr>
<tr>
<td>15. I have not faced any system errors in the system. 我在此電子學習系統上從未遇過系統錯誤的問題。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>16. The system’s graphical user interface is suitable. 此電子學習系統用戶介面很清晰。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>17. The system is easily accessible via Internet. 此電子學習系統容易透過互聯網造訪。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>18. The system can provide me a</td>
<td>5</td>
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</tbody>
</table>
personalized appearance (e.g. showing my progress, showing which chapters I have to revise, etc.)

此電子學習系統上能提供個人化的用戶版面，如提供我的學習進度、提醒我需要閱讀的資料等。

19. The system is interactive.

<table>
<thead>
<tr>
<th>Perception towards the content quality</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 4: Content quality 第四部分: 內容質量</strong></td>
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</tr>
<tr>
<td>Please circle the number that best describes your perception towards the content quality. 請圈出你認為最合適的答案下的數字。</td>
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<tr>
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<td>5</td>
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</table>

20. Learning materials are supported by multimedia tools (e.g. pictures, animations, simulations, videos, audios, etc.).

在此電子學習系統上有不同的多媒體電子教材輔助學習，如圖片、動畫、模擬的學習遊戲、影片和聲音等。

<table>
<thead>
<tr>
<th>Perception towards the content quality</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</table>

21. Learning materials are attractive and motivate me to learn.

系統上的電子教材非常吸引，能提升我的學習興趣。

<table>
<thead>
<tr>
<th>Perception towards the content quality</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</table>

22. I find it easy to understand and follow the instructions given by the teacher or the system.

我能夠明白和跟隨老師或者系統上的教學指

<table>
<thead>
<tr>
<th>Perception towards the content quality</th>
<th>Strongly Agree</th>
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<th>Disagree</th>
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</tr>
<tr>
<td>23. Learning tasks are clearly explained. 學習任務非常清晰。</td>
<td>5</td>
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<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>24. Vocabulary and terminology used are easy to understand and follow. 詞彙和術語簡單易明。</td>
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<tr>
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<td>26. Abstract concepts (principles, formulas, rules, etc.) are illustrated with concrete, specific examples. 抽象的概念 (如一些原理、公式或法則) 均有足夠的例子解釋。</td>
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<tr>
<td>27. The contents are covered sufficiently with an appropriate degree of breadth. 系統上的內容涵蓋全面。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>28. The content is up-to-date. 系統上的電子教材與時並進。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>29. Supporting materials, web-links and given examples are up-to-date and real-life examples which improve my learning. 系統上的教材內容、相關的網頁連結和例子與時並進，並能幫助我的學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
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</tr>
</tbody>
</table>

**Part 5: Teacher’s attitude 第五部分: 老師的支援**

Please circle the number that best describes your perception towards the teacher’s support. 請圈出你認為最合適的答案下的數字。
<table>
<thead>
<tr>
<th>Perception towards the teacher’s support</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. The teacher gives me feedback through the e-Learning system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>31. The teacher encourages me to interact with classmates by using the system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>32. The teacher follows up students’ problems and tries to find out solution in the system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>33. The teacher frequently updates learning materials in the system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>34. The teacher fixes all the errors and mistakes in the materials on the system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>35. The teacher is good at communication with students during the use of the e-Learning system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>36. I find it easy to communicate with the teacher during the use of the e-Learning system.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
37. The teacher created an online environment conducive and enjoyable for learning via the system. 老師創造了一個有利於學習的平台和一個愉快的學習環境。  | 5  | 4  | 3  | 2  | 1  
38. The teacher is proficient with all the content used in the course. 老師精通所有於課程中使用過的學習材料。  | 5  | 4  | 3  | 2  | 1  

**Part 6: Theme-based questions 第六部分：發展學生各項能力的成效**

Please circle the number that best describes your perception on the following items. 請圈出你認為最合適的答案下的數字。

<table>
<thead>
<tr>
<th>Theme-based 發展學生各項能力的成效</th>
<th>Strongly Agree 非常同意</th>
<th>Agree 同意</th>
<th>Neutral 中立</th>
<th>Disagree 不同意</th>
<th>Strongly Disagree 非常不同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. The use of the e-Learning system enhances my ability of self-directed learning. 此電子學習系統能加強我的自主學習。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>40. The use of the e-Learning system enhances my creativity. 此電子學習系統能加強我的創意思維能力。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>41. The use of the e-Learning system enhances my ability of problem solving. 此電子學習系統能加強我的解難能力。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>42. The use of the e-Learning system enhances my computational thinking skills. 此電子學習系統能加強我的計算思維能力。</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Part 7: Open ended questions 第七部分：開放題

43. Which particular aspect(s) of the use of e-Learning /the system did you find the most useful?
你認為電子教學/此電子學習系統中的哪一個部分最有用？
_________________________________________________________________
_________________________________________________________________

What changes/additions would you recommend for the use of e-Learning /the system to make it successful?
你認為在電子教學/這電子學習系統有甚麼需要改進？
_________________________________________________________________
_________________________________________________________________

44. Any other comments? 請問你有其他意見嗎？
_________________________________________________________________
Appendix H - Web-based Resource System

QEF and non-QEF projects for IT in Education – Web-based Resource Retrieval System

The QEF and non-QEF projects are valuable assets for teachers and education practitioners. Also, there exist a number of well-developed e-Learning tools which can facilitate teaching and learning processes. A tailor-made web-based online system has been built up for retrieving the above-mentioned resources:

http://www4.comp.polyu.edu.hk/~qefitedu/user/search.php

The projects and tools are categorized based on KLA and education sectors. Based on the project and tools descriptions, relevant keywords have been extracted based on natural language processing technology. Users of the system can efficiently retrieve these resources which facilitate course curriculum design and material preparation process.

Particularly, two listings are given in the system:

1. QEF and non-QEF projects (e-Learning Pilot Schemes)
2. e-Learning tools

QEF and non-QEF projects (e-Learning Pilot Schemes)

A list of QEF projects and non-QEF projects from e-Learning Pilot Schemes can be retrieved from the system. The detailed information, including title, description, project type, key learning area (KLA), school sector, keyword, organization/school, and deliverables, of the projects are shown.
Example

Step 1. Choose “Project and Tool List” from the top menu.

Step 2. A list of QEF and non-QEF projects are displayed.

Step 3. Choose a project and click “Details”.

Step 4. The detailed project information is displayed and web links are provided for accessing the project deliverables, including proposal, reports and samples of teaching materials.
**e-Learning tools**

e-Learning tools are essential to teaching and learning processes and the Centre of Excellence (CoE) scheme has introduced many useful e-Learning tools to schools teachers. These tools are extracted and a list has been consolidated. Using the system, users are able to retrieve the information of these e-Learning tools, including name, description, keyword, type, function, platform and KLA.

**Example**

Step 1. Choose “Project and Tool List” from the top menu.
Step 2. Select the “Tool” tab.

Step 3. A list of e-Learning tools are displayed.

Step 4 Choose and click a tool.

Step 5. The detailed tool information is displayed and external web links are provided for accessing the tool.
**Name:** Socrative Teacher  
**Tool No:** T2018/0024  
**Description:** Engage, assess and personalize your class with Socrative! Educators can initiate formative assessments through quizzes, quick question polls, exit tickets and space races all with their Socrative Teacher app. Socrative will instantly grade, aggregate and provide visuals of results to help you identify opportunities for further instruction. Save time and visualize student understanding when it matters, now! To get started using Socrative, simply register for a Socrative Teacher account. Your Socrative account will work with other Socrative Apps and via all browsers at Socrative.com. Students can connect to your unique room by opening their apps or joining your room at socrative.com on any device.  
**Keywords:** quick question polls, Socrative Teacher app, Socrative Teacher account, View students results, real time, Share, teachers  
**Type:** Mobile App Website  
**Url:**  
https://b.socratic.com/login/teacher/  
School and KLA filters

To facilitate retrieving relevant projects and tools based on school sector and KLA, users can apply the filter function. In the below example, “Primary” and “Mathematics Education” are chosen and a list of relevant projects and tools are displayed.
Search Functions

The system offers three searching functions for users to search for relevant QEF and non-QEF projects and e-Learning tools:

1. General Search
2. Search Wizard
3. Advanced Search

General Search

A Google style search engine is constructed to allow the users to search information based on keywords. The search bar provides search hints to users dynamically when the user is typing in a search query.

Example

Step 1. Search keyword, “learning”. (Note: a list of suggested keywords are provided)
Step 2. A list of relevant projects is displayed.


Step 4. The detailed project information is displayed and external web links are provided for accessing the project deliverables, including proposal, reports and samples of teaching materials.
Search Wizard

This search function allows users to retrieve project and e-Learning tool information based on KLA and education sector.

Example

Step 1. Choose a KLA. For example, “Chinese Language Education”. Click “Next”.

Step 2. Choose an Education Sector. For example, “Primary”. Click “Next”.

262
Step 3. A list of relevant projects is displayed.


Step 5. The detailed project information is displayed and external web links are provided for accessing the project deliverables, including proposal, reports and samples of teaching materials.
Advanced Search

The advanced search function allows users to find project and e-Learning tool information based on project particulars:

<table>
<thead>
<tr>
<th>QEF and Non-QEF Projects</th>
<th>e-Learning Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Name</td>
</tr>
<tr>
<td>Description</td>
<td>Description</td>
</tr>
<tr>
<td>Year</td>
<td>Keyword</td>
</tr>
<tr>
<td>KLA</td>
<td>Type</td>
</tr>
<tr>
<td>School Sector</td>
<td>Function</td>
</tr>
<tr>
<td>Keyword</td>
<td>Platform</td>
</tr>
<tr>
<td>Organization/School</td>
<td>KLA</td>
</tr>
</tbody>
</table>

**Example**

Step 1. Enter the following queries. Click “Next”.

**Title: mathematics**

**Keyword: interactive**
Step 2. A relevant project is displayed.

Step 3. Choose the QEF project 2006/0198, “Enhancement of the Facilities in Mathematics Rooms”.

Step 4. The detailed project information is displayed and external web links are provided for accessing the project deliverables, including proposal, reports and samples of teaching materials.
<table>
<thead>
<tr>
<th>Title</th>
<th>Enhancement of the Facilities in Mathematics Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project No.</td>
<td>2006/0198</td>
</tr>
<tr>
<td>Description</td>
<td>Promoting interactive teaching pedagogy for Secondary 1 to 4 students through setting up 23 workstations information technology centre to conduct project-based learning for Mathematics</td>
</tr>
<tr>
<td>Year</td>
<td>2007-09 to 2009-02</td>
</tr>
<tr>
<td>KLA</td>
<td>Secondary</td>
</tr>
<tr>
<td>School Sector</td>
<td></td>
</tr>
<tr>
<td>Keywords</td>
<td>Interactive teaching pedagogy, 23 workstation information technology, project-based learning</td>
</tr>
</tbody>
</table>
Appendix I - Resource Package: Teacher Advisers’

Comments

Comments from teacher adviser 1

“Consultancy Services for Consolidation and Redevelopment Work on Information Technology (IT) in Education” Project
Resource Package – Suggested Lesson Plans Feedback Sheet

Please review the good practices with suggested lesson plans given and kindly give us your comments based on the following four indicators.

1. **Good practice reviewed: ***collaborative learning**協作學習__________

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>學理足夠，如能增加電子評估 (Google Form)的收集、分析及跟進更佳。可增加更多介紹課堂組織的設計及理念，讓老師了解整個教學設計及背後動機。</td>
</tr>
</tbody>
</table>
|     | - Is the pedagogy sound?  
- Is it applicable to the learning context? | Yes | |
| 2   | Tools     | Yes                   | 教材套中介紹了四個e-Learning tools：Padlet、Skitch、Google Form及Online map reading exercise。有關電子學習工具十分有效及指引清清晰。 |
|     | - Are the tools useful?    
- Are the instructions clear? | Yes | |
| 3   | Feasibility | Yes | 計劃的可行性高，亦算容易使用。 |
|     | - Is it easy to implement? | Yes | |
| 4   | Organization | Yes | 組織清楚，容易理解 |
Any other comments?

建議如下：
1) 於教材套中增加介紹課堂組織的設計及理念

教材套中介紹了四個 e-Learning tools 電子學習工具：Padlet、Skitch、Google Form 及 Oneline map reading exercise。

教材套中最大的亮點是利用電子學習工具把課堂組織及連結起來。

Padlet: 提供了一個學生分享及討論的平台
Skitch: 讓學生於相片中更容易加入說明及資訊
Google Form: 網上即時評估
Oneline map reading exercise: 網上地圖閱讀

教材套可增加更多介紹課堂組織的設計及理念，讓老師了解整個教學設計及背後動機。而有關電子學習工具只是其中一個選擇。因 e-Learning tools 電子學習工具可能很快便被更新、淘汰。如教材套中只著眼介紹個別電子學習工具，很快便可追不上學校的需要。故建議教材套中可把電子學習工具分類型，老師在使用有關教材套時只需選用相關或相類似的電子學習工具即可。

2) 於教材套中介紹一些跨平台的電子學習工具

以這個教材套為例，隨著 e-Learning tools 電子學習工具的發展及進步，建議可介紹一些跨平台的電子學習工具供老師使用。例如：「G Suite and Classroom」

Google的教育軟件及平台，便可把整個教材套串連。

1) Google Classroom 及 Google Sites 與「Padlet」的功能相似。
2) Google Snapseed 及 Google Slide 與「Skitch」的功能相似。
3) Google Form
4) Google Map 與「Oneline map reading exercise」的功能相似。

其優點是老師在使用有關教材套時不會因電子學習工具的運作平台不同，而無法使用有關教材套。而且統一一個學習平台，對老師的掌握及運用更佳。

PolyU project team’s responses and revisions made on the Resource Package:

The teacher advisor agrees that the suggested activity plan is appropriate. The project team has made changes according to his suggestions and the e-Learning tool list in Appendix A has been revised as well as being categorized according to the school sectors and KLA/subject for teacher’s easier searching.
2. Good practice reviewed: **creative communication 創意溝通**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>學理充足</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>教材套的電子學習工具有效。介紹亦充足。</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>計劃的可行性高，容易使用。</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>組織清楚，容易理解</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Any other comments?**

建議如下：
如「小學創意動畫教育拓展計劃」能提供 YCME 系統使用說明的影片供老師觀看及學生自學更佳。
另外，市面上亦較少繁體中文介面的動畫創作軟件供低小學生使用，如「小學創意動畫教育拓展計劃」能提供有關的工作紙設計更佳。

**PolyU project team’s responses and revisions made on the Resource Package:**

Exercise sheets of the YCME system cannot be included in the Resource Package due to copy-right issue. The project will seek if there is any traditional Chinese interface of similar packages in the later work.
3. **Good practice reviewed: interactive classroom 互動教室**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>學理充足</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>教材套中介紹了 e-Learning tools 電子學習工具：Kahoot。有關電子學習工具指引清清晰。</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>計劃的可行性高，容易使用。</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>組織清楚，容易理解</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Any other comments?**

建議如下：

本教材套的亮點並非電子學習工具：Kahoot。而是有關電子學習工具的使用點子。建議教材套中提供不同課題所設計問題的圖片，供老師使用。

老師亦可參照教材套的設計，利用不同同類型的電子學習工具，如：Quizlet,Nearpod,Socrative,PingPong 等，進行相同的教學。

**PolyU project team’s responses and revisions made on the Resource Package:**

The project team has revised the supporting materials and included a set of scaffolding questions with pictures for teachers to reference and use.
4. **Good practice reviewed:** situating learning

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>學理充足</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>教材套的電子學習工具有趣。介紹亦充足。</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>計劃的可行性一般。</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>組織清楚，容易理解</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Any other comments?*

教材套中應用 AR 擴增實境工具於課堂上的事例，只增加學生學習趣味，對學與教的幫助成疑。教材套中可增加說明有關教學的理論及技巧，說明有關技巧與影片教學的分別，增強老師使用的信心。

**PolyU project team’s responses and revisions made on the Resource Package:**

The project team has revised the background and pedagogical approach on the learning activity to help teachers in adopting the materials and being useful in other scenarios.
**Comments from teacher adviser 2**

“Consultancy Services for Consolidation and Redevelopment Work on Information Technology (IT) in Education” Project Resource Package – Suggested Lesson Plans Feedback Sheet

Please review the good practices with suggested lesson plans given and kindly give us your comments based on the following four indicators.

1. **Good practice reviewed: Using IT to create an interactive class**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td>Yes</td>
<td>This is a summarizing quiz. Objective 1, arousing interest can be easily achieved as an i Pad definitely make the students open their eyes wide. But the pedagogy as to achieve the second objective is too vague. Teacher wants to 'develop' students' understanding and acquisition of perimeters. There are 4 questions only. More variations such as setting a 3D table or a coffee table and a square at the end.</td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td>Yes, but to a certain extent.</td>
<td>-The tool helps teachers, very clearly and quickly, to see which students have better understanding and acquisition. However, some students who are unable to master well the concept, the competitive game is in fact a</td>
</tr>
</tbody>
</table>
discouraging factor. The instructions used by the teacher focus more on setting and using the tools more than focusing on teaching concepts. It is difficult to see the variations in question setting. The instructions on tool setting is OK. The instructions on teaching Math concept is not seen.

| 3 | Feasibility                  | Yes | - The tool is helpful indeed. -it is an easy tool as teacher just set a few questions as consolidation. -However, many a time, teachers do not have problems in setting questions, but setting good questions, as students' level are diversified. |
|   | - Is it easy to implement? |

| 4 | Organization                | Yes, to a certain extent | - Teacher is trying to set the questions with various shapes of rectangles. Furthermore, two questions are set with 1 digit and 2 digits to show variation. -However, if some students have problems on the concept, the follow up questions can be as equations, asking students how to get the answers. +e.g. 5+5+3+3 5+3+5+3 (5+3)x2 (5x2)+(3x2) |
|   | - Is the organization clear and easy to understand? |
-Instead of a consolidation knowing the result of the students, the Kahoot tool can be a set of questions with miniscule scales.

Any other comments?
The problem of implementation is not just on Kahoot as a competitive tool or discussion, it is how teacher can use Kahoot to set several sets of scaffolding questions during the teaching steps. Sometimes, lessons are rush and teacher realize the problems of some students, but it is a waste of time for teachers to set remedial classes or detention after schools, especially the Math concept of understanding is various in individuals. If the questions set in Kahoot is abundant and teachers can tick more those less able students to redo as self-study at home, it may sound better.

PolyU project team’s responses and revisions made on the Resource Package:
The teacher advisor has given a useful comment on adding more variations to the Kahoot questions, such as setting a 3D table or a coffee table a square at the end of the questions. Based on this comment, the project team has revised the last two questions of template A of C.2.2.3 on P.51 of the Resource Package.

Moreover, the teacher advisor has also suggested to design several sets of scaffolding questions for students’ better understanding of the concept. The project team agrees with the teacher advisor’s suggestion and has revised the suggested activity plan as shown in the Resource Package. A set of scaffolding questions has been set up and shown in the template A of C.2.2.3 of the Resource Package for teachers’ reference.
2. **Good practice reviewed:** Using e-Learning tools in field study to engage students and enhance collaborative learning

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>-the pedagogy sounds good and is quite user friendly as capturing images and photos by adding lines and words are easy. -Achieve self-directed learning, collaboration and evaluation. -the application is in alignment with objectives and context. -</td>
</tr>
</tbody>
</table>
|     | - Is the pedagogy sound?  
           - Is it applicable to the learning context? |                       |                          |
| 2   | Tools     | Yes                  | -The whole project is supported by 3 Apps. -it means that students should be/must be familiar with its usage before the project. Or else, it will be a waste of time when students start the excursion. -every step is shown with clarification and illustration support. |
|     | - Are the tools useful?  
           - Are the instructions clear? |                       |                          |
| 3   | Feasibility| Yes                  | -Students are allowed to write or draw or illustrate to share ideas. -Students are quite independent in learning. They can have their autonomy. |
|     | - Is it easy to implement? |                       |                          |
Any other comments?
The 3 Apps are easily been installed and used. Students learn in groups, which can show high communicative, cooperative and self-management skills. However, they are suitable for quite elite students. Furthermore, this kind of outing need a lot of preparation, manpower and experts in the same field.
Can it be done in primary? Maybe, such as recognizing the school plants, places in school, different helpers at school. It is a good stimulation for further lesson plans.

PolyU project team’s responses and revisions made on the Resource Package:

Having three apps in the whole project in our suggested activity plan, the teacher advisor stresses that students should be familiar with the usage of the apps before the project, or else, it would be a waste of time when students start the excursion. The project team is aware of this and the suggested activity plan in the Resource Package has included a reminder to the teacher of sharing instructional videos of the e-Learning tools and asking the students to get familiarize with the usage of the tools before the field trip.

Moreover, the project team also suggests that the suggested activity plan can also be implemented in Primary Schools with minor adjustments in the learning content and activity location, such as recognizing plants or living species in different places at school.
3. Good practice reviewed: Creative communication increases students’ engagement and enhances peer learning.

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>No</td>
<td>- The comprehension, the writing and the story creation Toontastic are three different things. They can be separated. - First, the comprehension is an beginning. There is no fun on ‘adventure’. - Second, the writing is too primitive without an input because the comprehension focus on 6WH while the story focus on something else-the challenges and conflict... - Thirdly, the creation of story will be confined by the pictures in the Apps, which means even a student have created their own story with pen, the animation in the Apps cannot fulfill it. So why don't cancel the writing and just use the Apps for drawing and writing?</td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes, to a certain extent.</td>
<td>- The tools are useful and is quite interesting when students are spending time to learn and get a product, especially to aim at creation</td>
</tr>
</tbody>
</table>
and speaking and sharing on platforms. However, in the teaching instructions, there are no clear teaching steps. Students can have their own free style in writing.

<table>
<thead>
<tr>
<th>3</th>
<th>Feasibility</th>
<th>No</th>
<th>- It is easy as an ECA lesson, creative writing class or self-learning. - However, as to implement in a regular language teaching in classroom, the teaching design is not in alignment with the IT creation part. - From an angle of teaching language and story writing, the, conversational style in the comprehension is quite different from the language used in an animation. In an animation, there are many interjections such as 'Oops!', 'Ouch!', 'Alas!' are not taught as a vocabulary input, neither in comprehension nor in writing part.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Organization</th>
<th>No</th>
<th>As mentioned, there are three different parts. For each part, the teaching steps and focus are not seen and everything is done at home. This can only be achieved in elite schools or students with good support at home.</th>
</tr>
</thead>
</table>

**Any other comments?**
-The teacher who design the lessons is too greedy. He or she should look into the Apps and uses it first. For story creation, I have tried many. If it is drawing by hand, it
is not a matter to draw first or to create first. But for students who do not have many language input, drawing and acting can help to create vocabulary before writing.

-However, if the IT tools are confined, it is better to create the story, with the help of IT group, then the language teacher uses the idea to write the story or tell the story. Two different skills have two different input. Writing skill focuses more on descriptive style. Writing speech bubbles focused on interesting main points. Speaking focuses on intonation and expression.

**PolyU project team’s responses and revisions made on the Resource Package:**

The suggested activity plan has been simplified with clear teaching steps, and the learning objective has also been revised. The revised activity plan is English animation creation and story writing, guiding students in expressing their own ideas through drawing and animation creation. Key steps with screen-caps of how the e-Learning tools is used are also included in Section C.2.4.2 in the Resource Package to support the activity.

Moreover, the project team has consolidated the teacher advisor’s suggestions and the sharing of the e-Learning tool, YCME by the interviewed teachers in the Phase 2 study, the project team has revised the suggested activity plan in Section C.2.4.1 and included the collaboration with the IT group of the school. With the help of IT teachers/group, it is easier for the English teacher in guiding the students in using their ideas to write the story.
4. Good practice reviewed: Effective adoption of multimedia technologies to facilitate situated learning

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
</table>
| 1   | Pedagogy                         | Yes                  | -the pedagogy sounds OK with sights on one hand and descriptive language to come along.  
-If there are enough pictures, I mean not only the pictures provided in the textbook, it may be possible, or else, students have similar pictures. |
| 2   | Tools                            | Yes                  | -The tool is helpful if the images found are well prepared.  
-However, the guiding of using the AR may be an interruption. Students better learn the technology in advance. |
| 3   | Feasibility                      | Yes                  | -With the help of images, students may better master the feeling of the poet.  
-However, it is difficult to see or assess how much the students in special education school understand it. |
| 4   | Organization                     | Yes to a certain extent | -As it is quite situational and not easy to predict the reaction and response of the students, teacher may have the experience to handle. Similar organization in lesson |
Any other comments?
If similar lesson plan is for sharing, more suggestions on better or more able students. For example, provide more pictures or even Chinese paintings for students to capture and write the lines. Moreover, better students can write a poem about Hong Kong pollution or Sai Kung hiking trail using AR.

**PolyU project team’s responses and revisions made on the Resource Package:**

The teacher advisor suggests that it is better for students to learn the technology in advance in order to avoid the interruption during lesson time. The project team has revised and included this suggestion in the suggested activity plan in Section C.2.5.1. of the Resource Package. Moreover, the project team has also included the suggestion of extending the activity by adding a short essay task on the given topic using a lyrical approach as shown in Section C.2.5.3 of the Resource Package.
5. **Good practice reviewed: Using Blended learning to engage students in and outside the classroom**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>The flip, or according to the lesson plan, a video before the lesson as a preparation, is a good idea, which is like teachers doing lesson planning since the 21stC education reform. The idea of using a worksheet to weigh students' understanding is a common practice. Here it is more explicitly in small scales.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Not a must</td>
<td>If every student can learn well by watching a movie, it is impossible. Here, most of the videos are taught by a teacher on the screen. Though it can be paused by adding a question, I think the most important aim is not how the lesson is planned but what questions it is all about and to see the response of the students to the questions may sound more sophisticated than just set in the questions. -A good lesson plan is how a set of scaffolding questions are set to bring to full understanding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Feasibility
- **Is it easy to implement?**
  - Yes, to a certain level
  - The practice need high autonomy, self-independence and self-management, which are the most difficult criteria to be fulfilled nowadays in a busy Technological world, as teens are tended to have squeezing time on study. If students' adverse behavioral practice is solved, for each lesson, teacher can save up to 10 minutes around. The 10 minutes' time can be designed with lots of tricky questions and helping the diversities.

### Organization
- **Is the organization clear and easy to understand?**
  - Yes
  - The lesson plan is simple. Understanding is not a problem. The skill of implementation is just words on paper.

**Any other comments?**
After reading the lesson plan, I want to know more about the situation and feedback from the teachers and especially the changes that have brought to students.

**PolyU project team’s responses and revisions made on the Resource Package:**
The suggested lesson plan is quite appropriate in the teacher advisor’s opinion. Based on her comment and the sharing of the interviewed students in the Phase 2 study, the project team has revised the suggested activity plan and added a group-based activity for the students. In this group-based activity, students are divided into groups and solve more advanced algebra concepts together with their peers. Not only can they learn from each other, it also helps to build up their team spirit.

<table>
<thead>
<tr>
<th>No.</th>
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<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy - Is the pedagogy sound? - Is it applicable to the learning context?</td>
<td>No</td>
<td>The lesson plan is too idealistic. It is a whole learning from a word formation to a piece of writing. If students are found with a word formation problem in writing, teacher can set a worksheet to do proofreading. To me, I think it is done after the writing.</td>
</tr>
<tr>
<td>2</td>
<td>Tools - Are the tools useful? - Are the instructions clear?</td>
<td>Yes</td>
<td>-The tool is helpful, especially to students with dyslexia. -The instructions of using the apps is clear. In fact, the apps is clearly set with levels.</td>
</tr>
<tr>
<td>3</td>
<td>Feasibility - Is it easy to implement?</td>
<td>No</td>
<td>-Teaching Chinese and English language nowadays are becoming more complicated. In English, phonics may be helpful in reading and writing, but in Chinese, the apps helps with writing a character but not a phrase nor a whole passage. -herein, the teacher has put the apps as a game and self-learning, the teaching part is totally missing. The reason is it that there are</td>
</tr>
</tbody>
</table>
Any other comments?
The tool is sounded to be odd out and independent in this lesson plan. It is treated as a seasoning but not a main dish, losing its function. To activate its function, a more delicate design, such as focusing on a remedial class, may be more meaningful, e.g. 1. Read the story; 2. Pick out the odd word formation and use the apps as a teaching tool; 3. Try more games in the teaching tool; 4. Teachers design some games or exercise (Chinese calligraphy) to challenge the students; 5. Students can draft questions to challenge their schoolmates; and 6. Try writing or writing competition (Chinese calligraphy) among that small group (the final product).

The above lesson layout seems to be taught less but makes big because students can remember deeply.

PolyU project team’s responses and revisions made on the Resource Package:

Based on the teacher advisor’s comments, the project team has revised the suggested activity plan. The suggested activity plan has been simplified and the writing exercise has been excluded from this suggested activity plan. The teacher first read the story with the students and the students complete the worksheet during the lesson. Based on the teacher advisor’s comment, the idea is to let students to remember deeply. Therefore, the project team suggests to extract the characters from the game for the exercise in order to strengthen the students’ knowledge on the odd Chinese characters. The supporting documents have also been revised with more examples given to teachers as reference.
Comments from teacher adviser 3

“Consultancy Services for Consolidation and Redevelopment Work on Information Technology (IT) in Education” Project Resource Package – Suggested Lesson Plans Feedback Sheet

Please review the good practices with suggested lesson plans given and kindly give us your comments based on the following four indicators.

1. Good practice reviewed: ___Collaborative Learning______________

<table>
<thead>
<tr>
<th>No.</th>
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<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>Clear workflow and lesson plan. Summative assessment can be achieved by implementing the IT tools.</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>Clear instructions for different IT tools. Make good use of google form for collecting reflections.</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>Can further enhance the lesson plan in order to use it in different KLAs.</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any other comments?
Students have to learn different IT tools before the lesson.
Google Suite is updated and the file upload to Google drive can be done. It can further
enhance the uploading steps with the ease of adoption.

**PolyU project team’s responses and revisions made on the Resource Package:**

The project team has revised the suggested activity plan in Section C.2.1.1. and included a reminder to the teacher of sharing instructional videos of the e-Learning tools and asking the students to get familiarize with the usage of the tools before the field trip.
2. Good practice reviewed: **Creative Communication**

<table>
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<tr>
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<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy - Is the pedagogy sound? - Is it applicable to the learning context?</td>
<td>Quite</td>
<td>One-stop platform is suggested to implement the video/animation uploads and commenting.</td>
</tr>
<tr>
<td>2</td>
<td>Tools - Are the tools useful? - Are the instructions clear?</td>
<td>Yes</td>
<td>Toontastic is good for primary student with enough limitations and instructions. Meanwhile the animation can be done by certain templates only.</td>
</tr>
<tr>
<td>3</td>
<td>Feasibility - Is it easy to implement?</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Organization - Is the organization clear and easy to understand?</td>
<td>Yes</td>
<td>--</td>
</tr>
</tbody>
</table>

Any other comments? 
Nil

**PolyU project team’s responses and revisions made on the Resource Package:**
The project team agrees that a one-stop platform would be ideal for animation uploads and commenting. However, students can only create and export the animation created on Tootastic without an online platform for them to use. Therefore, the project team has suggested the students to export their animation created and share to one designated e-Learning platform (school-based e-Learning platform/Google Classroom/YouTube channels for the class) decided by the teacher.
3. **Good practice reviewed: Interactive Classroom**

<table>
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<tr>
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<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>An interactive strategy is clear. Supplementary tools will be needed for further evaluation and inspection of students’ knowledge.</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>Kahoot! is a good tool for in-class interaction. Except MC and text questions, it can implement Auction-like activities for other teaching and learning strategies.</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>Support both web-based platform and Apps-based one.</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
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</tbody>
</table>

**Any other comments?**

Kahoot! can be served as part of the lesson for invoking students’ motivation and interaction. It is a quick tool for identifying students’ correctness of particular knowledge or concepts. Other tools / learning activities should be implemented for enhancing the whole lesson plan on either formative or summative assessment.
PolyU project team’s responses and revisions made on the Resource Package:

Based on the sharing of the interviewed teachers in the Phase 2 study, the project team has revised the suggested activity plan and suggested Kahoot as a supporting tool to the lesson. The teacher first teaches the students about the mathematical concept and Kahoot is used to test the understanding in the concept. Moreover, a team-based game mode is also suggested to teacher in order to cater students’ diverse learning abilities. The project team has also added a remark for this suggested activity plan with similar e-Learning polling tools for teachers’ reference.
### 4. Good practice reviewed: __Situated learning________________

<table>
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<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Quite</td>
<td>Clear and easy-to-use interface.</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and easy to understand?</td>
<td></td>
<td></td>
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</tbody>
</table>

**Any other comments?**

Nil
5. Good practice reviewed: **Blended Learning**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td>Yes</td>
<td>Indeed employ the similar pedagogy with flipped classrooms. Preparation of videos might be the burden of whole project. It may be a good idea if sharing on videos / video database among schools is feasible.</td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td>Yes</td>
<td>EDpuzzle is specially designed and good for mathematical subjects since the platform supports the use of formulas. Explain Everything is another user-friendly tools for video taking by using tablet.</td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td>Quite</td>
<td>Difficulties depends on the teachers IT skills and familiarities of Apps.</td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Any other comments?

Either EDpuzzle or Explain Everything would be good IT tools for helping the learning strategies. However, there are still lacks of integrated platform which can handle the following issues:

1. user accounts control fit-in the school structure.
2. database and repository of videos (even storage of videos).
3. tracking and analyze the student performance.

**PolyU project team’s responses and revisions made on the Resource Package:**

The teacher advisor’s suggestion on a similar application, Explain Everything is well noted by the project team. This application has also been included in the list of e-Learning tools for teachers’ reference.
6. Good practice reviewed: Gamification

<table>
<thead>
<tr>
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<th>Appropriate (Yes/No)</th>
<th>Comments for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedagogy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is the pedagogy sound?</td>
<td>Yes (Excellent)</td>
<td>Continue for developing for different contents. Enrich the gaming database.</td>
</tr>
<tr>
<td></td>
<td>- Is it applicable to the learning context?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Are the tools useful?</td>
<td>Yes</td>
<td>Easy-to-use and well design interface.</td>
</tr>
<tr>
<td></td>
<td>- Are the instructions clear?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Feasibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is it easy to implement?</td>
<td>Yes</td>
<td>--</td>
</tr>
<tr>
<td>4</td>
<td>Organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is the organization clear and easy to understand?</td>
<td>Yes</td>
<td>Clear and easy-to-follow instruction. Can further enhance and provide “learning packages” for different levels (primary 1 – 6) and different contents in order to fulfil the concept of learning repository.</td>
</tr>
</tbody>
</table>

Any other comments?
Generally it is well-known and good design gamification sample.
Further investigation and amendments on the gaming console and simply fit-in some similar learning contexts, say English wording.
Appendix J - Dissemination Seminar (Program Rundown and Photos)

Program Rundown for the Dissemination Seminar

‘Connecting the Communities – IT in Education’ cum dissemination briefing on ‘Consolidation and Redevelopment (C&R) Work on Information Technology (IT) in Education’

Commissioned by the Quality Education Fund (QEF)
Co-organized by the Department of Computing (COMP) and the Educational Development Centre (EDC), The Hong Kong Polytechnic University

Date: 10th February, 2017 (Friday)
Time: 4:00pm – 6:00pm
Venue: TU103, Yip Kit Chuen Building, The Hong Kong Polytechnic University

<table>
<thead>
<tr>
<th>Time</th>
<th>Program Rundown</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 – 4:00pm</td>
<td>Registration</td>
</tr>
</tbody>
</table>
| 4:00 – 4:10pm | Welcoming Speech  
The Hong Kong Polytechnic University |
| 4:10 – 5:00pm | Good Practices of IT in Education  
(primary, secondary and university speakers from IT in Education projects) |
| 5:00 – 5:10pm | Findings on Consolidation and Redevelopment (C&R) Work on Information Technology (IT) in Education  
(COMP Project Team) |
| 5:10 – 5:20pm | Introduction of the Resource Package  
(COMP Project Team) |
| 5:20 – 5:35pm | Demonstration: Blended Learning in The Hong Kong Polytechnic University |
| 5:35 – 5:45pm | Q & A session                                                                 |
Photos of the Dissemination Seminar

Dissemination seminar held on 10th February, 2017

A total of 120 participants joined the dissemination seminar