

Final Report on the Research Project of Building Online Assessment Resources to Empower Frontline Professionals and Students.

Reading and Writing across Key Stages 1 to 2 (ELE)

Research team:

Principal investigator – Dr Anita YK POON
Co-investigator – Professor Sandy SC LI
Co-investigator – Mr Tony KH LAI
Research Associate – Ms Connie LAU
Department of Education Studies
Hong Kong Baptist University

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1. Introduction

Basic Competency Assessment (BCA) is one of the education reform proposals recommended by the Education Commission in its “Report on Reform Proposals for the Education System in Hong Kong” published in 2000, and subsequently implemented by the Education Bureau (EDB). BCA comprises Student Assessment (SA) and Territory-wide System Assessment (TSA) in the Key Learning Areas (KLA) of Chinese, English and Mathematics. These are low-stakes test programmes designed to diagnose and improve students’ learning. Schools can make use of the assessment data to identify learning needs and take follow-up actions on their own.

Building on BCA, a new assessment resource platform named Student Assessment Repository (STAR) is currently being developed. STAR aims to promote Assessment for Learning (AfL) and Assessment as Learning (AaL) with optimal use of technologies. The scope of STAR covers the full curriculum. A large quantity and variety of assessment tasks are expected to be developed through multiple sources. Through this interactive platform the EDB hopes to build up teachers’ assessment literacy and enhance feedback provided to teachers and students in the learning-teaching-assessment cycle, assisting teachers to decode and explain students’ performance so that they can plan focused learning more appropriately and improve daily assessment practices.

The English Language Curriculum Guide (Primary 1-6) (CDC, 2004), which has been implemented since September 2005, recommends that the teaching of reading skills and strategies should be enhanced at primary level. Although various efforts have been made by the Education Bureau and schools to strengthen the learning and teaching of reading, it has been pointed out in the reports of Territory-wide System Assessment (Hong Kong Examinations and Assessment Authority, 2013 & 2014) and the findings of internal studies to identify possible problems in the learning and teaching of reading (Tong, 2009 & 2010) that there were problems leading to students’ learning difficulties. Building on the efforts made, investigating the role different aspects of language (e.g. lexis, genre, grammar, syntax) play in performing communicative functions across Key Stages is expected to lead to a promising solution.

With the rapid development of digital and mobile technologies, the Internet and social media in the 21st century, there are now a wide variety of texts which are often multimodal, and distributed electronically. Students are exposed to various text types more often and so they need to possess new sets of literacy skills and practices to critically interpret, use and create texts. As new literacy skills are to be covered by international assessments (e.g. PISA and PIRLS), it is time for us to consider integrating such skills into assessment practices, building teachers' capacity to assess the 21st century learning and developing self-directed learners who are good at trying different strategies and reflecting on them, especially metacognitive strategies to manage learning in meeting new challenges that never cease to arise in this new era of technology.

The research team of the Department of Education Studies (EDUC) of Hong Kong Baptist University (HKBU) was commissioned by the EDB to investigate and develop effective approaches to enhance online assessment and develop e-assessment packages (including the provision of feedback and LT materials) for connecting reading and writing at Primary level. The research findings, professional development resources and project deliverables were expected to become a useful asset to STAR.

2. Objectives of the research project

The research project aims at building online assessment resources to empower both frontline professionals and students to connect reading and writing across Key Stages 1 to 2 (English Language Education), and the specific objectives of the project are:

- 2.1 To develop up-to-date reading and writing e-assessment packages (including the provision of feedback and LT materials) for the Learning-Teaching-Assessment (LTA) cycle with innovative and interactive pedagogical and assessment methods in response to the rapid development of new literacies and the growing use of e-learning/assessment platforms;*
- 2.2 To investigate the role different aspects of language (e.g. genre, lexis, grammar, syntax) play in performing communicative functions and to draw pedagogical implications accordingly;*
- 2.3 To build the capacity of teachers and students to engage in assessment for and as learning through the above assessment tasks, feedback and LT materials with self-explanatory notes and annotations via e-platforms/learning management systems;*
- 2.4 To enrich teachers' metalinguistic knowledge and improve their pedagogical skills as required in facilitating and assessing self-directed learning; and*
- 2.5 To assist students in gaining metalinguistic awareness (e.g. genre analysis knowledge) and 21st century skills (e.g. collaborative problem-solving skills) so that they can become self-directed language learners who are competent, reflective and collaborative.*

3. *Theoretical framework*

3.1 *e-Learning and English Language Teaching and Learning*

With the rapid advancement of ICT (Information and Communications Technology) in the past two decades, CALL (Computer-Assisted Language Learning) has evolved from a small field of study supporting the application of technology to English language teaching merely in the areas of teaching grammar rules and drilling vocabulary, sentence patterns and dialogues, to a broad field of study informing a myriad of CALL programmes that encompass multimedia technology, computer-mediated communication, social media such as social annotation, Wiki and Google Drive, text-to-speech and voice recognition technologies and a wide range of collaborative technologies for knowledge co-construction. Drawing on the findings of numerous studies by various researchers (e.g. De la Fuente, 2003; Fiori, 2005; Jones and Plass, 2002; Smith, 2004), Chapelle (2011, p. 640) argues that “*online is ever going to be appreciated for its value, rather than appearing to be a weak alternative to classroom teaching and assessment ... [because] research is beginning to show some of the unique benefits of online learning for language study.*”

As informed by research, our research team attempts to examine how e-learning can be better integrated into the primary English language curriculum in general, and specifically in the teaching and learning of reading and writing. It is beyond doubt that classroom is an ideal place for language teaching and learning because interaction between the teacher and learners and among learners is authentic and instantaneous. However, with the emergence of a wide range of ubiquitous learning technologies, the quality of student-student interaction and student-teacher interaction, students’ exposure to different genres and the depth and breadth of students’ engagement in reading and writing can be enhanced across formal (classroom) and informal contexts.

In addition, as certain components in the primary English language curriculum – reading and writing – are run independently without any integration, learner diversity in the classroom poses challenges for both the teacher and learners, thus rendering in-depth learning difficult, if not possible; the limited time spent in the classroom is not able to provide space for enhancement in metalinguistic awareness and knowledge for the teacher and learners, and 21st century skills for students. E-learning is, thus, able to fill the gaps as well as to address the needs of students, teachers and the schools. Below is the framework that integrates e-learning and English language teaching and learning:

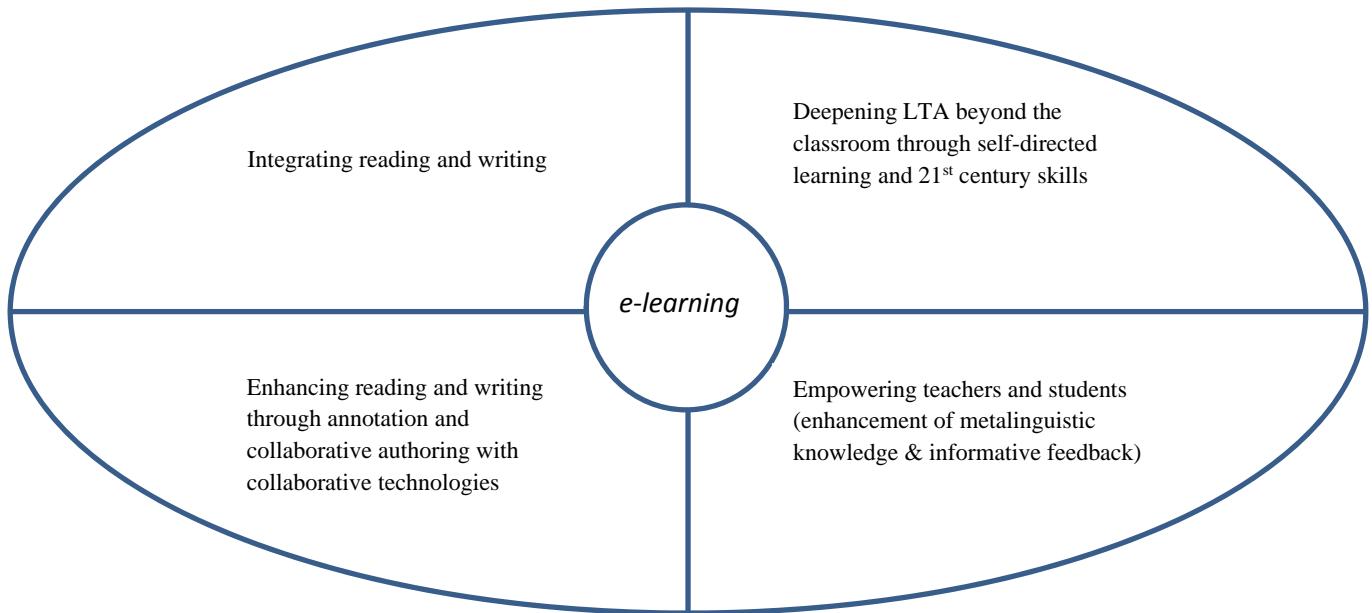


Figure 1: Enhancing teaching of Reading and Writing through e-learning

3.2 Designing, Teaching & Learning and Assessment Cycle

The design of the Teaching & Learning and Assessment (TLA) cycle of a literacy programme follows the theoretical framework proposed by the English as an Additional Language or Dialect (EALD) Regional Consultants from the Department for Education and Child Development (DECD) of the Government of South Australia – “a framework is for systematically and explicitly scaffolding learners to access and produce texts. It also provides for the gradual release of responsibility, toward a point where learners can independently and confidently construct a text for a major assessment task” (DECD, retrieved from: http://www.decd.sa.gov.au/literacy/files/links/link_157498.ppt).

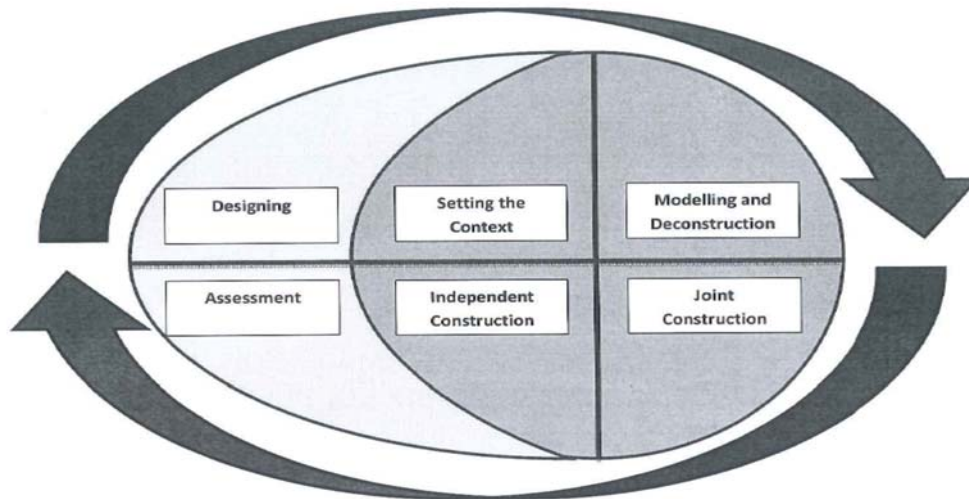


Figure 2: The Teaching & Learning and Assessment Cycle of a Literacy Programme (EALD, DECD)

There are six stages in the adopted TLA cycle, namely “*Designing*”, “*Setting the Context*”, “*Modelling and Deconstruction*”, “*Joint Construction*”, “*Independent Construction*” and “*Assessment*”. In each of the stages, there are different key considerations to which teachers can choose to respond regarding literacy instruction in the unit of work.

Stage 1: Designing

In designing a unit of work, teachers can make reference to the final assessment task to facilitate teaching and learning of a particular text type. For instance, teachers have to consider how the assessment task is aligned with the teaching and learning and the assessment criteria for reading and writing of the target text type.

Stage 2: Setting the Context

Teachers have to contextualise the teaching and learning of reading and writing of the target text type through explicit teaching of and about language and meaning using activities aligned to the organising elements of the language and literacy levels and appropriate texts of the target text type.

Stage 3: Modelling and Deconstruction Stage

Through reading model texts of the target text type, teachers guide students to do text deconstruction by analyzing a range of modelled texts at the whole text level, at the paragraph level, at the sentence level and at the word level through exploration of the structural and grammatical elements that are relevant to the target genre (start with whole text).

Stage 4: Joint Construction

Throughout this stage, teachers reinforce the language elements and organisational structures of the target text type by reviewing the whole text with students and comparing jointly constructed text(s) with model text.

Stage 5: Independent Text Construction

The aim of this stage is for students to write the target text type independently. Scaffolding may be necessary for some students through explicit teaching of planning techniques for the composition of the text. These may include genre structure template, key ideas/information about the text, note taking, mind mapping, using graphic outlines, etc. Teachers will use their judgement to determine how much scaffolding may be needed and for which students.

Stage 6: Assessment

Both the teacher and his or her students can be involved in this stage. The teacher bases his or her evaluation upon the standard of student work against the assessment criteria. The teacher can use their reflections during the cycle and be informed by support teacher observations, and comments from other Learning Area teachers about a student's ability to transfer new language learning. The teacher can also use student feedback about their work (e.g. student self-assessment checklist) or comments about their level of engagement and the usefulness of the teaching and learning activities (e.g. learning journal, survey). The students' achievement and the evaluation of the teaching and learning process during this cycle will influence the Designing Stage of further cycles.

For details, please refer to the official website of DECD:

http://www.decd.sa.gov.au/literacy/files/links/Year_2_English_Infromation.doc

In this study, the EDUC research team **focused** on investigating how to incorporate the above theoretical framework into the development of effective approaches to enhance online assessment and develop e-assessment packages (including the provision of feedback and LT materials) for connecting reading and writing at Primary level.

4. Design rationale for the LTA packages

The design rationale for the LTA packages is based on the theoretical framework discussed in Section 3. Reference is made to The English Language Curriculum Guide (Primary 1-6) (CDC, 2004)

and the findings of internal studies to identify possible problems in the learning and teaching of reading (Tong, 2009 & 2010) in the design of up-to-date reading and writing e-assessment packages (including the provision of feedback and LT materials) for the Learning-Teaching-Assessment (LTA) cycle with innovative and interactive pedagogical and assessment methods in response to the rapid development of new literacies and the growing use of e-learning/assessment platforms. Through trying out of the designed reading and writing e-assessment packages, the role different aspects of language (e.g. genre, lexis, grammar, syntax) play in performing communicative functions can be investigated and pedagogical implications can be drawn accordingly.

It is hoped that the capacity of teachers and students to engage in assessment for and as learning through the designed assessment tasks, feedback and LT materials with self-explanatory notes and annotations via e-platforms/learning management systems can be built. As for the teachers, the employment of the assessment packages can enrich teachers' metalinguistic knowledge and improve their pedagogical skills as required in facilitating and assessing self-directed learning. As for students, the assessment packages can assist them in gaining metalinguistic awareness (e.g. genre analysis knowledge) and 21st century skills (e.g. collaborative problem-solving skills) so that they can become self-directed language learners who are competent, reflective and collaborative.

5. Implementation

The project went through two phases of implementation that lasted for 15 months.

5.1 Phase I (13 October 2015 – 31 January 2016)

5.1.1 Identifying participating schools & participants

Four primary schools in Kowloon and the New Territories including New Territories East, North and West areas were invited to participate in the study. The four schools (School A, School B, School C and School D) share similar background. First, they are all government-aided primary schools. Among the four schools, two are millennium schools. One school has a long history of more than 40 years and it is a prestigious school welcomed by parents. Another school has a multicultural background admitting many non-Chinese speaking students, some of whom speak English as their first language. Another school was established in 2009 and it is also welcomed by the parents in the district. Teachers of the four schools claimed that learner diversity is large among students. Among the four schools, three have a 5-class structure while the other one has a 4-class structure from primary one to primary six.

There were 31 English teachers, English panel heads and principals participating in the meetings conducted in November 2015, and a total of 747 students participated the online e-learning sessions.

5.1.2 Conducting needs analysis

A needs analysis was conducted in each of the participating schools with a view to finding out the strengths and weaknesses of their students regarding reading and writing as well as the schools' experience in e-learning.

Four meetings were scheduled to meet with the English teachers, panel heads and principals of the schools. The meetings were held on 23 November, 24 November, 1 December and 4 December 2015 respectively. Each meeting lasted for more than one hour. (Appendix I The Summary of Strengths and Weaknesses of Reading and Writing). The HKBU research team had five representatives joining the meetings. The following eight questions were prepared and discussed at the meetings:

- 1. How do your students generally perform in the reading and writing papers in school examinations? What are their strengths and weaknesses?*
- 2. Do students who perform well in reading also do well in writing? In average are students able to connect reading and writing based on their results in the examinations?*
- 3. How do you use the textbook and supplementary materials in your reading and writing classes?*
- 4. How do you teach reading and writing?*
- 5. How are the selected text types taught in your reading and writing classes?*
- 6. Do you think your students are able to follow reading and writing lessons? Do they enjoy them?*
- 7. What are the difficulties your students face in reading and writing lessons?*
- 8. Is e-learning used in English language teaching and learning in your school? How is it conducted?*

5.1.3 Formulating pedagogical and assessment methods

Based on the data collected in the needs analysis, the research team developed some pedagogical and assessment methods for the design of e-packages and assessment. The project basically adopted the LTA model as the pedagogical and assessment framework. A backward design is used. That means assessment is the starting point for each unit of work, and teaching and learning are involved during the process of assessment. Task-based Learning (TBL) – the current method of English language teaching underpinned by communicating language teaching – is employed as the design for the e-packages. Each unit consists of a number of small assessment tasks, which serve as building blocks that help to develop students' skills and knowledge in performing the final assessment task.

5.1.4 Developing two sample LTA packages for KS1 and KS2 (Unit 1)

After studying the schemes of work, textbooks and supplementary teaching materials provided by the schools, the research team identified two Unit 1 of KS1 and KS2, and developed two units of work accordingly.

Description of units:

KS1 Unit 1 The topic of KS1 Unit 1 is ‘Weather and Seasons’. The final assessment task is to write a book chapter on “Dream Trip”.

KS2 Unit 1 The topic of KS2 Unit 1 is “Vacation Time! Travel Time!”. The final assessment task is to write a blog about the study tour to Australia.

Key features of the units (see Appendix IIa):

- A variety of text-types
- A wide range of vocabulary related to the themes of “Weather and Seasons” and “Vacation Time! Travel Time!”.
- Reading skills
- Annotations to support student learning
- Accessing students’ assessment data in real time
- Assessing student work online using the rubrics designed by the HKBU research team

5.1.5 Workshops, trial runs and professional development (PD) packages

To provide teachers’ with a better understanding of the e-learning packages and their operation, workshops and trial runs of Unit 1 were organized during November 2015 in each of the participating schools. Some feedback on the flow of the lessons as well as technical problems were collected during the trial runs. The problems were fixed by the research team accordingly.

Two PDs in connection to the two units were developed to facilitate teaching. Additional pre- and post-tasks were designed to enhance teaching and learning of reading skills, writing skills, grammar, vocabulary,etc. (See Appendix III Sample of KS1 PD)

5.2 Phase II (1 February 2016 – 12 January 2017)

5.2.1 Developing two sample LTA packages for KS1 and KS2 (Unit 2)

Description of units:

KS1 Unit 2 The topic of KS1 Unit 2 is “Party Time!”. The final assessment task is to write an essay about the party for an essay competition.

KS2 Unit 2 The topic of KS2 Unit 2 is “Food Culture!”. The final assessment task is to write an article about Indian cuisine for the school magazine.

Key features of the units (see Appendix IIb):

- A variety of text-types
- A wide range of vocabulary related to the themes of “Party Time!” and “Food Culture!”
- Reading skills
- Annotations to support student learning
- Accessing students’ assessment data in real time
- Assessing student work online using the rubrics designed by the HKBU research team

5.2.2 Workshops, trial runs and professional development packages

Additional tasks were designed in the form of pre-/post-tasks for the enhancement of grammar in most lessons. The second round of workshops and trial runs of Unit 2 were organized during November to December 2016. The focus of the second workshop was on assessment and evaluation. The assessment rubrics developed by some assessment data of the students were analysed and reported to the schools (See Appendix IV All workshops and trial runs, Appendix V Results from teacher surveys, Appendix VIa Marking of the chosen tasks and Appendix VIb Assessment rubrics).

5.2.3 Dissemination Seminar

A dissemination seminar was conducted on 7 January 2017 (Saturday). A total of 26 primary teachers attended the seminar. A brief description of the project, the LTA framework, the LTA packages, the assessment rubrics and students’ assessment data were delivered. There were two rounds of hands-on experience for the participants to try out the units. Finally, the evaluation of the project was shared with all attendees.

6. Assessment data

6.1 Findings based on students’ assessment data

- Compared with Phase 1, fewer students attempted and completed Unit 2 in Phase 2. The teachers complained that they were not given sufficient time to teach and ask students to do Unit 2.
- Learner diversity was detected in the final assessment task of each unit. Higher ability students especially KS2 students were able to produce longer essays than lower ability students. The former incorporated some interesting ideas in the texts, and language use was quite accurate involving a variety of sentence structures and vocabulary. The latter tended to write very short texts, which were full of grammatical errors.

- Some students did not follow the instructions of the tasks. For example, for KS2 Unit 1, the final task required students to describe the three cities in Australia that they had visited, but some of them simply described one city. Some students even gave totally irrelevant answers, or simply copied some information from the texts provided, probably because they did not understand the instruction. In order to achieve the objective of LTA, it is recommended that the teachers could do some follow-up work with the students.
- Spelling was a major error of the students across the board. In order to achieve the objective of LTA, it is recommended that the teachers could do some follow-up work with the students.
- Most of the KS1 classes used tablets or i-pads, probably because KS1 students were not good at using keyboards. The consequence was that their writing was illegible. It is recommended that keyboarding skills should be introduced at an early stage if schools go for e-learning.

6.2 Comparability between the design of questions and students' English abilities

The "Rasch Model" was introduced by Professor Li to guide teachers to look into matching of the design of questions and students' English abilities. It was reported that most questions in Unit 2 of KS1 and KS2 were appropriately matched with students' ability. That means the level of difficulty was gauged at a point that students' cognitive manipulation of language rules and English knowledge were well-developed and managed by the design of tasks as well as the question types. The relation between "item difficulty" and "student ability" was reported. Teachers' attention was drawn to the skills of setting questions for students specifically in this regard (see Appendix VII).

7. Evaluation

7.1 Surveys on teachers and students

Phase 1

- KS1 students liked Unit 1 Task 11 the best (Word guessing activity), an interactive game to check students' spelling of the learnt target vocabulary. Students disliked KS1 Unit 1 Task 13 the most. The last writing task that required students to integrate and synthesize information and skills acquired in the previous tasks and produce a blog. Students liked KS1 Task 11 the best, the word guessing game, an interactive game to check students' spelling of the learnt target vocabulary (See Appendix VIII Student surveys).
- KS2 students disliked Unit 1, Task 8 - the last writing task, which required them to integrate all information about the different cities in Australia provided in the previous tasks and make the best choice of their own favourite Australian city. Obviously, the high demand of manipulation work on meta-knowledge and English rules made the task a difficult one for students.

- The “brain-drain” activity was the most meta-cognitively demanding task, which was rated the least popular among all students of KS1 and KS2.
- It was recommended by teachers that more alternative answers should be allowed. For example, the ball is “underneath” the table should be accepted in addition to “under” (See Appendix IX Teacher surveys).
- Teachers would like to see improvements in providing instructions to students in the interfaces as clear instructions helped students do tasks better on their own.
- The ‘resuming function’ to let students log onto the previous “unattempted” or “poorly attempted” tasks was not in place in phase I; therefore, students had to start all over again if they stopped in the middle of a task.
- Teachers were impressed by the design of the online assessment system, for example, the “online marking” using the assessment rubrics developed by the HKBU research team.

Phase II

- All sessions were well-conducted and smoothly run.
- The issues concerned most by the HKBU research team were the “technical issues” and “level of difficulty” of tasks were resolved. Yet, the possible information gaps for instructions to facilitate task completion and prompts prepared for students on the interfaces could still be further enhanced. That means more annotations or clues could be provided for less-capable students. Based on the rationale of letting students work on their own with minimum teaching behavior at the very beginning of the units, more supporting hints to let students “mouse over” for bridging between tasks and task completion is necessary.

7.2 Surveys on the participants of the dissemination workshop

- Concerning the feedback on the Dissemination Workshop conducted on 7 January 2017, positive comments were received from many teachers (See Appendix XI). A lot of comments were also collected to inform the research team for further improvements of the e-learning packages. Most teachers agreed that the workshop was relevant to their work. Among the respondents, 79% were satisfied with the information provided in the workshop. 75 % of the teachers agreed that the objectives of the workshops were well addressed. 83 % of the teachers acknowledged the relevancy of the workshop with regard to their work in schools. 87% of teachers found the presenters of the workshops effective.

8. Findings and Recommendations

- Most teachers liked the e-packages because the design and themes were very meaningful and authentic. It is recommended that more “bridging tasks” should be provided to assist students in achieving the KS1 and KS2 levels.
- The teachers generally found the units a bit difficult for their students. It is recommended to lower the level of difficulty of the tasks.
- Lower primary students might have difficulty in using keyboards. It is recommended that more “Drag and Drop” tasks should be provided to students.
- Students found it difficult to memorize some information in the text previously read and apply it to the final task. It is recommended to allow students to revisit the previous pages by pressing the icon that leads them back to the previously learnt vocabulary and information.
- Despite the effort of the team to minimize the possible gaps of connecting knowledge and language rules, there is still a large room for improvement to bridge the gaps for students. For example, a lot more hints should be added in order to bridge the gaps. This can be realized by adding more annotations to the texts so as to facilitate self-directed learning. “Mouse over’ vocabulary is a perfect option to draw students’ attention to the key information that they are not familiar with.
- One thing that the designer has to pay special attention to is that the annotations or hints should be presented on the interfaces to avoid giving misleading connections of ideas. For example, the layout of the main text or article has to be simple where students can focus on reading for its meaning. That means the arrangement of words should be made clear. For example, in KS2 Unit 1 lesson one, if the words “itinerary” and “cultural activities” need to be explained, there should not be any change in colour. The colour of these words should remain black; otherwise, a change in the colour for some words would mislead students and make them think that the coloured words are the answers. (See Appendix XII). The design of the text layout in relation to other functions added to the interface is of extreme importance. First, any distractors that block the meaning-making flow of students should be removed. Second, consistency in using specific sets of icons should be developed for the e-packages to provide hints and annotations.
- Very few students attempted Unit 2 as compared to Unit 1 because the schedules of the participating schools were tight. The schools requested to have more time to complete Unit 2, but to no avail. It is recommended to allow schools to have more time to try out the units (e.g. during a long holiday).
- It was observed during the trial runs of the units that most teachers paid attention to the assessment part of the units only. Not many of them referred to the suggestions on teaching and learning

provided in the PD packages. It is recommended that teachers should make good use of the PD packages, which aim at supporting their teaching and professional development.