

Final Report of Project

Project No. : 2007/0313

Part A

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

Name of Organization/School: Centre for Information Technology in Education, Faculty of Education, The University of Hong Kong

Project Period: From 09/2008 (month/year) to 05/2011 (month/year)

Part B

*Please read the **Guidelines to Completion of Final Report of Quality Education Fund Projects** before completing this part of the report.*

Please use separate A4-size sheets to provide an overall report with regard to the following aspects:

1. Attainment of objectives
2. Project impact on learning effectiveness, professional development and school development
3. Cost-effectiveness – a self-evaluation against clear indicators and measures
4. Deliverables and modes of dissemination; responses to dissemination
5. Activity list
6. Difficulties encountered and solutions adopted

Part B

1. Attainment of Objectives

“Learning 2.0: an Online Platform and a Teacher Support Network for Curriculum and Assessment Innovation in Liberal Studies for the NSS Curriculum” (hereafter, Learning 2.0) is a two-year project which aims to address three critical issues in teaching Liberal Studies (LS) to a large population of secondary school students - managing, facilitating, and assessing enquiry-based learning. The objectives of the study are:

1. to design, implement, and evaluate a technical system for supporting enquiry learning in LS
2. to set up a teacher professional network for curriculum and assessment innovation

Through the collaborations with the LS teachers in four participating secondary schools, we have fully achieved all the above-mentioned objectives with great success. Details are described as follows:

Objective 1: To design, implement, and evaluate a technical system for supporting enquiry learning in LS

Activities related to the participating teachers

An interactive learning assessment platform, iLAP, (renamed from Enquiry Learning and Assessment System (ELAS)) has been successfully developed through the collaborations between the project team and the LS teachers participated in the Learning 2.0 study. There are three stages in developing the interactive learning assessment platform (iLAP). That is design, implement and evaluate. These three stages act as a loop system in design the various features in the iLAP. Activities in these three stages included:

- Regular meeting with the seconded teachers to consult and solicit their views and needs in designing the platform
- Project team designed and developed these basic functions according to teachers' need
- Participating teachers tried out in their actual classroom and provided feedback to the project team
- Project team modify the existing function according to teachers' suggestion and feedback
- The modified version was tested by the teachers again
- Conduct semi-structured interview with participating teachers to solicit their views on the platform and suggestions for further improvement

Activities related to the participating schools

In order to enable teachers and students to use iLAP in the LS learning and teaching, various activities were conducted in participating schools. It included:

- Two training workshops in which the basic-level of iLAP setting and the advanced level of iLAP setting are offered to school technicians and/or teaching assistants
- Training workshops for participating LS teachers and other LS teachers to introduce the features of iLAP were conducted in each school.
- Training workshops for participating students in each school on how to use the platform for the purposes of facilitating learning in LS were also conducted.
- Conduct semi-structured interview with technical staff to solicit their views with regards to the problems encountered during the implementation in school
- Conduct semi-structured interview with principal and core-members in the project to solicit their views on

the design and implementation as well as evaluation of the iLAP.

- Conduct semi-structured interview with participating students to solicit their views on the platform and suggestions for further improvement

Evidence or indicators of having achieved the objective

- An interactive learning assessment platform (iLAP) has been successfully developed. The platform adopted an open-source design which includes the following basic features:
 - Storage area for teachers to upload relevant learning and teaching information and materials.
 - Storage areas for students to keep project resources and work-in-progress.
 - Templates for creating questionnaires, summaries and/or conclusions.
 - A collaborative environment for sharing information and ideas, debating issues and co-construction of learning products.
 - Web-2.0 applications such as blogs, wikis, and RSS feeds to facilitate students' learning.
 - Various learning and teaching tools such as mindmap, NanoGong, YouTube Video Playlist block and Polling block were created.
 - Different kinds of assessment such as peer assessment, rubric assessment as well as sample assessment were created under the notion of assessment for learning.
 - Statistical and management tools that help teachers to monitor students' engagement in various iLAP supported tasks and activities were created. Information such as the nature of the activities and frequency of their online contributions as well as whether the assignments were submitted on time or not were provided to teachers. These will provide useful data for assisting teachers in making the judgment on students' performance.
- iLAP was formally launched in September 2009 for LS in the 1st year NSS curriculum in the four participating schools.
- The project team has conducted stress test and system refinement in August 2009.
- Four participating schools have tried out various features in the iLAP in actual classroom setting in 2009 academic year.
- Data from the student questionnaire indicated that the interface is user-friendly.
- Data from the teacher interview indicated that the use of iLAP to a great extent release teachers' worry on process assessment of the IES.
- Data from the student interview indicated that the platform provides a learning space for students after the lesson and facilitate the inquiry based learning in LS.

Objective 2: to set up a teacher professional network for curriculum and assessment innovation

Teachers play a central role in this project in designing the platform as well as curriculum and assessment implementation using iLAP. This project used different ways to set up a teacher professional network for curriculum and assessment innovation and this objective has been fully achieved. The following paragraphs delineated related activities in setting up such network as well as the evidence for the achievement in this area.

Providing time and space for setting up the professional network

Regular meetings have been held in HKU for every Tuesday afternoon. This provides participating teachers an opportunity with face to face meeting to share, exchange and discuss emerging issues with regards to curriculum and assessment innovation in LS as well as to provide feedback on the use of iLAP to the project team and share their experience in using the iLAP. All such knowledge exchange is extremely useful for the development of the platform and development of the teaching and learning materials with the use of iLAP in LS.

The project team strongly believed that teachers' technological pedagogical content knowledge (TPCK) is very important in using the iLPA. Technology needs to be integrated into pedagogy and curriculum design so as to help students to learn better. Therefore, teachers within the network were required to open their classroom for the team members and the network teachers to observe how students are using iLAP in their learning as well as the actual implementation and design of the lessons with the use of iLAP.

After that a debriefing session was also conducted to follow up and discuss pedagogical issues related to the observed lesson and suggestions which may help the teacher to improve their teaching were also discussed.

Connecting with local subject experts

Despite knowledge exchange within the teacher professional network, the project team has tried every effort to provide professional development for the networking teachers.

In March 2009, the project team has organized a professional development workshop on authentic assessment using rubrics. In late 2009, the project team has organized a number of workshops focusing on information search, information management, information literacy and its assessments, school expertise were also invited to give practical exemplars to the teachers.

Further, in June 2010, the project team has invited an expert on humanities education, [redacted] to give professional advice to the participating schools and the project, particularly on the development of the curriculum packages for this project. [redacted] has also given a talk on "Selecting core references and developing book reading activities for helping students to gain good conceptual understanding in the learning of liberal studies" to the teachers in July 2010. In addition, the project team has organized another seminar entitled "Integrating information literacy into NSS Liberal Studies" in the same month.

Such professional development activities have broadened teachers' views and knowledge, which consequently help to develop innovations in the LS curriculum and assessment.

Widening and exchanging assessment innovation beyond the local curriculum

In view of the new assessment in LS, we have invited colleagues from the ESF schools to introduce the concepts of e-portfolios assessment and provide us with practical exemplars. The project team also has invited scholars around the world to provide professional training to our network teachers. It included [redacted], who is a Professor of Cognition in GSE of UC Berkeley to give us a talk on cyber learning in classroom. [redacted], who is the Director of the Centre for Technology in Learning at the Stanford Research International (SRI), has discussed issues related to the project and provided recommendations on areas/directions that the project can improve. [redacted], who is the Director of International Studies SRI International, gave us a talk on innovation around the world and assessing 21st century skills. [redacted], Chair Professor of Learning with Digital Technologies in the Faculty of Culture and Pedagogy London Knowledge Lab, to discuss with the teachers about the pedagogical patterns and the use of technology.

These professional development wider teachers' horizon and give some ideas and stimulations for the teachers on kinds of innovative assessment in using technology.

Evidence or indicators of having achieved the objective

- A teacher professional network has been established within the 4 participating schools.
- LS Teachers in each school have tried out and test the features on the iLAP in their normal class teaching.
- LS Teachers in each school have designed and tried out at least one learning and teaching package that use iLAP to facilitate students' learning in LS.
- LS Teachers in each school have designed and implemented new assessment innovation in their class.
- In order to sustain and scale up the teacher professional network, teachers within this network also shared their experiences with educational community. Apart from the two dissemination seminars as scheduled in the proposal, teachers were also invited to share their experiences in various situations including in the Online Learning and Teaching Conference (OLTC), CITE Research Symposium (CITERS) 2009 and 2010 as well as staff development of Lok Sin Tong School Association Board in 2009.
- A project dissemination website has been developed (URL <http://learn20.cite.hku.hk/>). It includes the design principles of the project, platform introduction and features demonstration videos, teachers' user guide and technical staff user guide as well as some vivid exemplars on the curriculum and assessment design. All these materials are valuable resources for promoting this project as well as free for teachers to use and adopt.

2. Project Impact

Implementations of the Learning 2.0 project have brought many positive impacts on the learning effectiveness, professional development and school development. Details of the project impact are discussed as follows. Data are collected via teacher interview, student focus group interview, principal interview as well as discussion in the regular meeting and lesson observation.

a) Learning effectiveness

It was reflected by both teachers and students that the ILAP provides a flexible and open learning environment for them and broadening their horizons. They mentioned that with the use of ILAP students could extend their learning after lesson and many students expressed that as ILAP provided a share learning environment that allow them to view other classmate's work within and across classes that help them to learn from each other and widening their perspectives.

Besides, students also mentioned that by using ILAP they could receive timely feedback from teachers which help their learning. Teachers also mentioned that this approach was in line with the notion of assessment for learning. Apart from this, students also pointed out that comments and suggestions were also received from their peers and they have a sense of ownership for their learning and learning also became more self-directed. Teachers reflected that through the use of ILAP it was easier for them to monitor and check the students' progress. In addition, teachers also pointed out that in traditional learning it was very difficult for them to provide evidence for students' learning processes; however ILAP could captured both quantitative and qualitative data on students' learning processes that provides teachers with substantial information in evaluating students learning processes.

In addition, this project also fosters students' development in their potential and specific abilities. Teachers expressed that with the use of online forum it encourage students' participation. In more specific, teachers found that students, particularly for those who are learning passively in a normal classroom environment, were more willing to present their opinions in a chat room /online forum and sometime could give wonderful ideas on the online forum. Apart from this, as ILAP allows multi-media presentation to a certain extent it helps to cater students; learning diversity.

During the project implementation both teachers and students reflected that it provides a valuable opportunity for students to learn and practices information literacy (IL) skills which is one of the important skills needed in the 21st century. It was observed that at the beginning of the project, students have problems in Chinese input method; however at the end of this project, it was observed that nearly most of the students were capable to master Chinese input method. Besides, teacher and students pointed out that after the project, students were able to screen the useful information from abundant of sources, organizing information as well as how to use information ethically such as respect others opinion in online discussion , need to give reference when citing information. Furthermore, students also reflected that they were able to think in a critical manner in accessing information which is in fact a very important element in enquiry learning. In addition, teachers and principals also mentioned that students take a more active role in their learning and nurture a self-directed learning skill. All these skills including information literacy, critical thinking and self-directed learning are the essential skills needed in the knowledge society.

Last but not least, it was also found that the learning atmosphere was also improved. All the interviewees including principals, teachers and students indicated that there were more interaction between teachers and students and students and students insides and outsides the classroom. Many students also reflected that they have gained better learning experience, and they found that it is more interesting to learn LS. They also reported that their motivations in learning LS have been increased. Besides, as the learning and teaching processes are very transparent, teachers pointed out that even some lazy students would perform better than the traditional approach. Teachers also indicated the peer assessment in the ILAP also created a collaborative learning environment for students to help each others on how to improve their work.

b) Professional development

During the implementation of the project, many workshops and seminars have been organized (details please refer to Section five) so as to broaden teachers' horizons. Teachers from the four schools reflected that all such seminars/workshops are extremely useful in stimulating their way of thinking and enabling them to re-think how technology is used to facilitating the learning and teaching in LS.

Teachers pointed out that the teacher professional network also provide opportunities for them to observe other teachers' classrooms which also broaden their views on learning design using the ILAP for LS teaching and learning.

The project team has collaborated with the teachers to co-design the ILAP, teachers reflected that this co-design approach is much better than the traditional in-house development. As teachers pointed out that in the one hand the research team would develop a system that would be amenable to further extensions by users and also meet teachers' needs. One the other hand, teachers have greater sense of ownership of the platform and be more willing to use the platform for daily life teaching.

The project team also worked collaboratively with teacher in developing teaching and learning packages for LS. The teachers reflected that the development of such packages can help them review and rethink the curriculum design of their lessons; their pedagogy and how the technology can be better used. All these support teachers' professional growth.

In addition, teachers reflected that the collaborative lesson planning and to design a cross school test during the project implementation provides a valuable opportunities for them to share their experiences and exchange ideas which enhanced their professional development.

Finally, teachers also treasured the opportunities for them to share their experience to the educational communities in public such as dissemination seminars and those invited workshops by other schools and educational bodies. Teachers reflective that through these community building practices, they could review and consolidate what they have been done and also scale up the teacher network.

c) School development

In this project we found that different schools have different implementation strategies. To support the project implementation and development in schools, we found that some schools have used team approach which facilitates a smooth implementation of the project in their schools. The team usually includes the seconded teachers and a teaching assistant/ technician. The whole team works together to plan and design the curriculum, develops teaching and learning materials, and supports each other within the classroom. Such approach has positively impact in schools. It helps to establish sustainability as well as to scale up of these new practices in school.

Collaborations amongst the teachers from the four schools also have positive impacts to each other. For instance, teachers have shared their teaching experiences in using iLAP during the regular meetings so that some implementation problems can be avoided. They also shared their learning and teaching packages and willing to give suggestions for further improvement which is critical to teachers' professional growth. In addition, they also opened their classrooms and allowed the network school teachers to conduct lesson observations. Such activities are very useful as teachers reflected that they can learn from each other through these activities. Teachers treasured these practical experiences and knowledge exchange very much.

3. Cost-effectiveness

Table 1: Budget Checklist

Budget Items <i>(Based on Schedule II of Agreement)</i>	Approved Budget (a)	Actual Expense (b)	Change [(b)-(a)]/(a) +/- %
Staff Cost	\$1,553,976.00	\$1,446,822.68	-6.90%
Equipment& Licenses	\$210,000.00	\$235,735.30	12.25%
Services	\$2,316,424.00	\$2,315,151.00	-0.05%
General Expense	\$119,700.00	\$83,043.24	-30.62%
Contingency	\$0.00	\$0.00	0.00%

To help implement the study in a cost-effective way, the project strived to achieve an effective utilization of all available resources. Details are described as follows:

During the implementation of the project, the project team has conducted lesson observations and all the observed lessons were video-taped. The project team used existing equipment in the centre to conduct video-shooting. Those videos provide a valuable resource for teachers' professional development as well as teachers' self-evaluation.

The development of ILAP used open source it reduced the threats to sustainability of the software. In addition, as the platform is an open source there is no implication for the cost license, other schools is free to use this platform. iLAP is also flexible enough to be used in other contexts than LS. One of the participating schools has already extended the usage of iLAP to facilitate learning and teaching in Chinese.

Besides, those learning and teaching materials developed in this project are ready for teachers to use, teacher can adopt and revise those materials according to their students' level. To conclude, those deliverables developed in this project are ready for use and can be replicated by other schools without any financial implication.

Concerning the sustainability and scalability of the project the teacher network established in this project is a very important human resource infrastructure for ensuring the scalability and sustainability of the project outcomes. Through various in-house staff development in the four schools, school heads expressed that they will continuous use ILAP in LS learning and teaching and some principals also indicated that they will expand the use of ILAP not only in one or two classes but for the whole subject. One principal also indicated that they would consider using ILAP as the SBA system for their school. In addition, through various dissemination and sharing activities, the teacher network has helped the project team to promote iLAP to other secondary schools in Hong Kong. Many schools reflected that they were interesting to join the Phase II study (an extension of the Learning 2.0 project) and use the iLAP platform to teach LS. Amongst all the schools which have reflected their interests to participate in phase II study, the steering committee of the Learning 2.0 project has selected six schools to be partnering schools for the Phase II study.

4. Deliverables and Modes of Dissemination

Table 2: Summary of Project Deliverables

Item description (e.g. type, title, quantity, etc.)	Evaluation of the quality and dissemination value of the item	Dissemination activities conducted (e.g. mode, date, etc.) and responses	Is it worthwhile and feasible for the item to be widely disseminated by the QEF? If yes, please suggest the mode(s) of dissemination.
An integrated learning and assessment platform which uses Web 2.0 technologies and co-designed by the teachers.	<p>An integrated learning and assessment platform which uses Web 2.0 technologies have been developed successfully. Teachers in the four participating schools reflected that the platform is very useful for teaching and learning L.S., particularly in the aspects of inquiry-based learning. Students from the four participating schools reflected that the platform is easy to be used.</p> <p>During the dissemination activities, the participated teachers reflected that they were very interesting about the platform and would like to try to use it in their L.S. lessons.</p>	Two dissemination workshops were conducted in 2009, and three dissemination workshops were conducted in 2010.	As this platform is an open source platform, it is possible to be widely disseminated to the schools in Hong Kong through seminars and workshops.
A teacher's user guide for ILAP (on all functions developed in Phase I)	A teacher guide for iLAP has been developed and uploaded onto the Web. Seconded teachers from the four participating schools reflected that the teacher's guide is very detail, particularly on the use of a specific function within the platform.	The teacher user guide has been developed on a Wiki. Detail could be found in http://learn20.cite.hku.hk/	This item can only be disseminated with iLAP as a package. This is online materials and ready for school technical staff to use It is not useful if this item is solely disseminated in an activity.
A technician user guide	A technician user guide for iLAP has been developed and uploaded onto the Web. Technicians from the four participating schools reflected that this user guide shown the steps by steps sequences which help them in setting up the iLAP in their school.	The technician user guide has been developed on a Wiki. Detail could be found in http://learn20.cite.hku.hk/	This item can only be disseminated with iLAP as a package. This is online materials and ready for school technical staff to use It is not useful if this item is solely disseminated in an activity.
Modifiable and extendable curriculum learning packages	Four sets of curriculum learning packages have been uploaded onto the Web. Teachers reflected that these materials are very useful, particularly for them to introduce the project to their colleagues and show cases the features of the platform.	The four sets of modifiable and extendable instructional materials could be found in http://learn20.cite.hku.hk/	These online learning and teaching packages were designed by the participating teaching and it is available for teachers who wish to learn how to conduct their LS lesson with the use of iLAP to be used.
Assessment rubrics with authentic students' exemplars	Sets of assessment rubrics have been developed and uploaded onto the Web. Teachers reflected that such rubrics are very useful and can be used as a reference when they need to create their own assessment rubrics. It also gives students a clear illustration on the requirement of the assessment.	Three dissemination workshops were conducted in 2010. The rubrics were found useful by the participants. Detail could be found in http://learn20.cite.hku.hk/	This is online materials for LS teachers to use and adopt in their teaching and learning activities as well as can be introduced in other PD courses for using rubrics to assess students' learning
Thinking template	Different kinds of thinking templates were created so as to help students' learning in an issues based approach.	Online materials, available at: http://learn20.cite.hku.hk	This is online materials for LS teachers to use and adopt in their teaching and learning activities.

<p>A journal article to introduce the project</p> <p>(2009) 《學習 2.0》一個支援新高中通識教育及「專題探究」的學習及評估平台。 《香港教師中心學報》, 第六期, 43-51。</p>	<p>Introduce the project and shown case the use of the platform and some reflections on the usage of the platform</p>	<p>Distributed to each school and available online:</p> <p>http://www.edb.org.hk/hkrc/index.aspx?id=20091229170521&lang=t</p>	<p>This can be one of the deliverable for introducing the project to the teachers.</p>
<p>Annual dissemination seminars in 2009 & 2010</p>	<p>Participants reflected that the dissemination seminars were useful for broadening their view. Many of them have expressed their willingness to try to use iLAP after attending the dissemination activities.</p>	<ul style="list-style-type: none"> • Seminar and workshops 	<p>N/A</p>

Elements contributing to the success of the project

With the funding supported by QEF and the hard work of the project team and the participating schools, the project has been successfully implemented in schools. It was found that the following elements contribute to the success of the project to a great extent.

1. Co-design approach in designing the ilap

As aforementioned the project adopted a co-design approach in designing the learning and assessment platform, teachers not only act as users but also as designer in building up the platform. They reflected that this approach was more practical and also lead to the willingness of using the platform in their lesson design. It was because with the use of the platform it helps them to solve the actual problems that they are facing.

2. Adopt an open-source web2.0 technology

Using an open-source approach was also another important element contributing the success of the project. It is because open source solutions are generally do not require licensing fees and can build on the third party components as well as upgrade the system whenever possible. In this case the cost is rather low as compared with developing proprietary software. Besides, open source support is freely available and accessible through the online community.

3. Principal's support

It was found that all the principals in the four schools play a very supportive role in this project by providing manpower support (such as release teachers to attend the regular meeting/ sharing) and additional resources (such as technicians, computer facilities) as well as encouraging a sharing culture within and across schools. For example, during the implementation of the study, many principals have used additional resources to employ a teaching assistant to support the seconded teachers' work. One of the school principal has provided extensive supports to the seconded teacher, by allowing the whole LS teaching team to participate in the study. All such additional supports significantly helped the implementation of the project.

4. Teachers' devotion and networking

Teachers' devotion was an essential factor contributing to the successful implementation of this project. The successful implementation of the project highly depended on the collaborations between the project team and the seconded teachers, as deep engagement of experienced LS teachers are needed in the entire project process

including the design of iLAP functions, the development of curriculum resources and activities, and the evaluation of the online activities and resources through trial use with students. It was observed that all the participating teachers were highly devoted to the project and they were willing to use new technologies and try out new things in their lesson. Another characteristic of those participating teachers was the sharing culture. Teachers were willing to share their learning and teaching materials as well as giving suggestions to each other and discuss openly in the curriculum design. These characteristics to a great extent facilitate the interaction and exchange of knowledge and experiences which contribute to the success of the project.

Feasibility of continuation of the project

Teachers, students and principals from the four participating schools commented positively on the outcome of the project. As the platform has been developed and it adopted an open sources mode, there was no problem for schools to adopt and maintain the platform by themselves. Besides, the teacher network among the four schools has been established and there is a core group of teachers who are familiar with the platform management as well as how to design the learning and teaching using this platform. It is believed that there is no problem for teachers to continue the project in their own school as all the infrastructure and training have been developed. Some of the principals and teachers even indicated that they would not only use the platform in LS but also to expand in using the platform in other grade levels and other subjects. Principals also indicated that there are potentials for adopting this platform for the school based assessment too.

Apart from this, the project team also applied for another two year project, which is an extension of the Phase I study, so as to scale up the project in 10 schools and the project has been approved by QEF.

5. Activity List

Following is the list of project activities:

Types of activities	Brief description	No. of participants				Feedback from participants
		schools	teachers	students	Others (Please specify)	
Seminar	<ul style="list-style-type: none"> Date: 6/3/2009 Theme: Learning 2.0: an Online learning and assessment Platform (iLAP) and a Teacher Support Network for the Liberal Studies in the NSS Curriculum Venue: Rayson Huang Theatre, HKU 	No Figure	~80	0	60 (Local and international researchers, education practitioners)	Participants were impressed by the proposed iLAP features, particularly assessment and mind-map. Many of them have presented their wishes to see the proposed iLAP features.
Seminar	<ul style="list-style-type: none"> Date: 7/3/2009 Theme: Learning 2.0: an Online learning and assessment Platform (iLAP) and a Teacher Support Network for the Liberal Studies in the NSS Curriculum Venue: Rm 206 Runme Shaw building, HKU 	10	15	0	25 (Local and international researchers, education practitioners)	Participants were impressed by the proposed iLAP features, particularly assessment and mind-map. Many of them have presented their wishes to see the proposed iLAP features.
Seminar	<ul style="list-style-type: none"> Date: 18/3/2009 Theme: Innovation around the world and assessing 21st century skills Venue: Rm 101, Runme Shaw Building, HKU 	4	15	0	1 invited guest speaker	Participants were impressed by the findings and the assessment strategies used to assess 21 st century skills. They also mentioned that there is a need to develop assessment tools to assess students' 21 st century skills/general skills in general.
Professional development workshop	<ul style="list-style-type: none"> Date: 31/3/2009 Theme: professional development workshop on using e-portfolio Venue: Room 104, Runme Shaw Building, HKU 	4	15	0	3 invited guest speaker	Teachers reflected the workshop is inspiring and also provide useful hints and it gave them stimulus in assessing and managing students' work in IES.
Seminar	<ul style="list-style-type: none"> Date: 20/5/2009 Theme: Inquiry based learning in Science-Wise project Venue: Room 101&104, Runme Shaw Building, HKU 	4	9	0	1 invited guest speaker	Teachers were impressed by the information provided by the guest speaker, Prof. Linn. They reflected that the seminar helps them think how to teach LS in an interactive way. They also reflected that the use of visualization and simulation are very interesting and stimulating.
Conference	<ul style="list-style-type: none"> Date: 13/6/2009 Theme: Using the iLAP for the education community in the 8th Online Learning and Teaching Conference (OLTC) in Hong Kong Venue: United Christian College (Kowloon East) 	20	30	0	0	Participants showed their interests in using iLAP.
workshop	<ul style="list-style-type: none"> Date: 24/9/2009 Theme: Technical aspects of iLAP (basic level) Venue: Room 101, Runme Shaw Building, HKU 	4	4	0	0	Technical coordinators reflected that the workshop was very useful as it has provided guideline for them to set up the iLAP platform for the teachers and students in their schools.
Seminar	<ul style="list-style-type: none"> Date: 29/9/2009 Theme: Information sharing and information management using Google doc Venue: Room 102, Hui Oi Chow Science Bldg., HKU 	4	10	0	0	Teachers reflected that the seminar has broadened their views, particularly on how information could be shared by using the Web. They also reflected that the seminar has strengthened their information management skills.

workshop	<ul style="list-style-type: none"> Date: 29/9/2009 Theme: Mahara workshop Venue: Room 102, Hui Oi Chow Science Bldg., HKU 	4	14	0	0	Networking teachers were impressed by the functions available in Mahara. They informed the project team the additional function which they would like to have, and the wishes to use the tool in their teaching activities.
Seminar	<ul style="list-style-type: none"> Date: 6/10/2009 Theme: Information search skills Venue: Room 102, Hui Oi Chow Science Bldg., HKU 	4	9	0	1 invited guest speaker	Networking teachers reflected that the introduced information search skills were useful, and they may teach such skills to their students. The introduced social bookmarking tool, Delicious, has stimulated them to think and discuss how to use the technology in LS – information sharing on the Web.
Workshop	<ul style="list-style-type: none"> Date: 8/10/2009 Theme: Technical aspects of iLAP (advanced level) Venue: Room 101, Runme Shaw Building, HKU 	4	4	0	0	Technical coordinators reflected that the workshop was very useful as they have learnt how to set up student accounts and other advanced technical features in iLAP.
Workshop	<ul style="list-style-type: none"> Date: 13/10/2009 Theme: Tools for conducting project work Venue: Room 104, Runme Shaw Building, HKU 	3	6	0	1 invited guest speaker	Teachers reflected that the Google Doc functions introduced in the seminar (e.g. polling, survey, etc.) are useful for them to conduct lesson preparations. They also mentioned that such functions may also be useful for students to conduct IES.
Seminar	<ul style="list-style-type: none"> Date: 13/10/2009 Theme: Learning design support environment Venue: Room 104, Runme Shaw Building, HKU 	3	6	0	1 invited guest speaker	Teachers reflected that the seminar was very useful. They have discussed with the speaker about how to select suitable resources for teaching and learning activities, and how to enhance collaborations with other subject teams within their schools.
Workshop	<ul style="list-style-type: none"> Date: 14/10/2009 Theme: iLAP student training workshop Venue: Lok Sin Tong Young Ko Hsiao Lin Secondary School 	1	4	200	0	Students have learnt how to use iLAP for their learning activities after the workshop.
Workshop	<ul style="list-style-type: none"> Date: 20/10/2009 Theme: iLAP student training workshop Venue: Elegiantia College 	1	2	30	0	Students have learnt how to use iLAP for their learning activities after the workshop.
Seminar	<ul style="list-style-type: none"> Date: 3/11/2009 Theme: Big 6 (Information & Technology skills for student achievement) Venue: Room 102, Hui Oi Chow Science Bldg., HKU 	4	10	0	0	Teachers found that the information provided within the seminar is very useful, particularly to stimulate them to think the IL skills that their students need to acquire when they learn LS by using the Web.
Workshop	<ul style="list-style-type: none"> Date: 18/11/2009 Theme: iLAP teacher training workshop Venue: Elegiantia College 	4	30	0	0	LS teachers participated in the workshop reflected that the workshop is useful as they have learnt how to use different functions in iLAP for their teaching activities. They also reflected that they will consider using iLAP in their LS lessons.
Workshop	<ul style="list-style-type: none"> Date: 26/11/2009 Theme: iLAP student training workshop Venue: MFBM Chan Lui Chung Tak Memorial College 	1	2	40	0	Students were able to use iLAP to conduct learning activities as requested by their teachers.
Seminar	<ul style="list-style-type: none"> Date: 1/12/2009 Theme: Argumentative skills Venue: Room 104, Runme Shaw Building, HKU 	4	12	0	0	Teachers reflected that the information provided in the seminar were useful. They informed the project team that they will use the provided information to teach their students how to ask a good question when they conduct discussions in the discussion forum provided in iLAP.
workshop	<ul style="list-style-type: none"> Date: 5/1/2010 Theme: Diigo (a critical reading tool) Venue: Room 104, Runme Shaw Building, HKU 	4	10	0	0	Teachers reflected that the tool is promising and convenient. They also indicated their willingness to have a similar tool in iLAP.

Workshop	<ul style="list-style-type: none"> Date: 27/1/2010 Theme: iLAP student training workshop Venue: Ju Ching Chu Secondary School (Tuen Mun) 	1	2	35	0		LS teachers in Ju Ching Chu Secondary School informed the project team that the workshop is very useful as their students were able to use iLAP to conduct learning activities as requested by their teachers.
Symposium	<ul style="list-style-type: none"> Date: 6/3/2010 Theme: CITERS 2010 Venue: Room 101 & 104, Runme Shaw Building, HKU 	15	45	0		1 publisher 2 education parties	Participants reflected that the dissemination workshops have broadened their knowledge in the use of technology to support teaching and learning LS. Many of them have indicated their willingness to join the Phase II study and use iLAP in their schools.
Workshop	<ul style="list-style-type: none"> Date: 11/6/2010 Theme: Learning 2.0 project dissemination workshop Venue: CCC Rotary Secondary School 	24	53	0		9 EDB officers	Participants reflected that the dissemination workshops have broadened their knowledge in the use of technology to support teaching and learning LS. Many of them have indicated their willingness to join the Phase II study and use iLAP in their schools.
Workshop	<ul style="list-style-type: none"> Date: 12/6/2010 Theme: Learning 2.0 project dissemination workshop Venue: Room 101, Runme Shaw Building, HKU 	16	30	0	0		Networking teachers from the four schools agreed that school principals should be invited in future dissemination activities because school principals play an important role in assigning resources to support LS in schools.
Workshop	<ul style="list-style-type: none"> Date: 6/7/2010 Theme: Integrating information literacy into NSS Liberal Studies Venue: Room 101, Runme Shaw Building, HKU 	2	2	0		1 invited guest speaker	Networking teachers agreed the importance of setting collaborations with teacher librarians to enhance students' generic skills. However, they have mentioned that it may be a challenging task as not all teacher librarians would be so self-initiative and motivated to participate in the collaborations.
Seminar	<ul style="list-style-type: none"> Date: 13/7/2010 Theme: Selecting core references and developing book reading activities for helping students gain good conceptual understanding in the learning of liberal studies Venue: Room 101, Runme Shaw Building, HKU 	10	17	0		1 invited guest speaker	Teachers participated in the seminar reflected that it is essential to grasp core concepts of issues for deep thinking. They have also discussed how to relate and incorporate the books into different learning activities.

6. Difficulties Encountered and Solutions Adopted

During the project period, participating schools and the project team have experienced the following difficulties:

1. Students were not familiar with the Chinese input

Nearly all the four participating schools reported that at the beginning of the project, it is difficult for them to carry out the implementation as students were not familiar with the Chinese input. With the first year of experience, students who were participate in this project needed to catch up the basic Chinese input method before the second year of implementation. Training courses were offered to students in the four schools.

2. Limited manpower-technical support from school

In some schools teachers reflected that as they were not technically competence in managing the platform it was hard for them to cater for the technical aspects and on the other hand to carry out curriculum implementation. Therefore, the project team conducted a meeting with the principals to reflect the situation and additional manpower such as teaching assistances/ technicians in school were also involved in these schools so as to release the technical burden of the teachers.

3. Not enough computer room

Teachers reflected that there was not enough computer room for them to book for the learning and teaching using ILAP in LS. For some schools they have additional period teaching students how to use the ILAP after school at year 1 and design the curriculum for using ILAP as pre and post lesson activities. For some schools they have assigned some formal periods in the computer room to conduct the lesson in the second year.

4. Cannot recruit suitable candidates for the technical development of the platform

In the second year, as the participating schools have requested the project team to add some additional system development and programming tasks, the project team has difficulties in recruiting suitable full-time programmers instead we have sought QEF's approval in recruiting part-time staff to take up these additional technical tasks and also further sought approval from QEF for extending the project for six months in order to complete those additional tasks required by schools.