

**Title of Project - 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  
(revised)  
學習 2.0：為支援新高中學制通識科課程及評估而建的網上學習及教師支援網絡

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## PART C PROJECT DETAILS

From 2009, all senior secondary students in Hong Kong will be required to take Liberal Studies (LS) as a core subject. LS will involve using enquiry methods in 6 areas of study, as well as in an independent enquiry study (IES) project. This presents an unprecedented emphasis on enquiry in Hong Kong's educational system – for which teachers generally feel that they are not adequately prepared.

This project aims to address 3 crucial issues: managing, facilitating and assessing enquiry-based learning for a large population of secondary school students. While teachers have been developing strategies and expertise in facilitating enquiry-based learning over the last several years, particularly within the context of the subject Liberal Studies, how this can be effectively organized for a large number of students over an extended period of three years and efficiently documented and managed for the purpose of meeting the school-based assessment requirements stipulated by the HKEAA are significant challenges faced by teachers today. To meet these challenges require further pedagogical and assessment innovation as well as the support of an online learning and assessment support platform that will provide an appropriate infrastructure and functions for learning, management, communication and collaboration support.

Hence in this project, we propose to take a two pronged approach. One strand of the project involves the design, development, implementation, evaluation and improvement of a web-based **Enquiry Learning and Assessment System (ELAS)**, an integrated system that incorporates *Web 2.0 technologies* to promote interaction and reflection. The system will provide a way to manage the logistics of supporting, archiving, and assessing a large volume of assignments and projects, and will provide instructional materials (content) that can help teachers and students to develop their enquiry practices. A second, parallel strand of the project involves the establishment of a team of seconded teachers to contribute to the design of ELAS and to pilot its use for the implementation of good practices in the facilitation and assessment of learning through ELAS. It is envisaged that the two strands of this project will be fully integrated, thereby piloting a new model for developing learning technology and digital learning resources that builds on and fully support the innovative teaching and assessment practices. The instructional materials aim to help teachers deal with known difficulties in the implementation of enquiry-based learning, which include: ability to read critically, ability to search for and locate useful information on the internet, ability to pose questions suitable for enquiry, and ability to conduct evidence-based enquiries. The materials to be developed are based on the best knowledge education research has to offer, including research on knowledge building, scaffolding, reflection, learning communities, and professional development as well as on the expertise and resources that LS teachers in Hong Kong have already accumulated over the past few years.

An important innovation in this project is that the development of the ELAS would not be carried out using the conventional approach of needs analysis, implementation, evaluation, refinement and launch, which is commonly used even in the development of education software. This conventional approach may be useful for software development to tackle well defined tasks and processes, but

would not be adequate for developing software aimed 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. Ultimately, the technology and the content of instructional materials will be modifiable to ensure sustained use. Further, the system will be an excellent basis on which to scale up the innovative practices to teachers in other schools throughout the territory. The project is also an exemplar of good practice in school-university partnership to promote and support curriculum and pedagogical innovation.

### 1. Goals and Objectives

The New Secondary School (NSS) Curriculum will introduce Liberal Studies (LS) as a mandatory subject in Secondary 4-6. Of the 270 hours of instructional time, 90 are devoted to the Independent Enquiry Study (IES), which is the basis of the school-based assessment of LS. However, enquiry is an important pedagogical strategy that runs *throughout* the LS instructional program. Overall, the introduction of LS will present an unprecedented need for teachers to manage, support, and assess enquiry processes and outcomes. The need is not only for technical systems that can help teachers keep track of many student enquiry projects, but also for developing teachers' ability to guide students' projects and to identify weaknesses and strengths of the enquiries. The challenge is further compounded because there will be more variation in students' academic abilities than is presently the case with LS as an elective.

The main goal of the project is twofold: (1) to design, implement, and evaluate a technical system for supporting enquiry learning in LS; and (2) to set up a teacher professional network for curriculum and assessment innovation. The technical system will consist of a web-based enquiry **learning and assessment system (ELAS)**, which will include modifiable content that will help teachers and students develop the expertise in conducting enquiries. The system will provide *scaffolding* that will help students and teachers *reflect* on the quality of enquiry projects. Thus, our assumption is that assessment is not only used for summative evaluation, but that it also has a formative role – by reflecting on their work and feedback on it, students can improve the quality of their work. This assumption is essential to school-based assessment (SBA), another component of the NSS. The system will be designed for flexible use, for example for managing student projects as well as work by teachers to get a better understanding of how to guide and assess student projects. The various needs for interaction with content, reflection, and commenting will be met by using various Web 2.0 technologies. The teacher professional development network is part and parcel of the innovation in that the teachers will contribute to the conceptual design, evaluation and implementation of the system. Furthermore, the system itself will also act as a medium for dissemination as well as a support platform for scaling up the innovation to more teachers and more schools.

The design of the project can be summarized by the following *5 design principles*:

1. *Provide support for learning as well as assessment.* We see assessment and learning as integrated, consistent with the intent of SBA and Assessment for Learning. Hence learning tasks and scaffolding will be built into the system on important learning outcomes targeted in the LS curriculum.
2. *Provide support for the whole LS program, not just the IES.* While the IES is a major opportunity for students to learn to undertake extended enquiry, it should be seen as a culminating learning experience for enquiry and not the only enquiry related learning in LS. In fact, the other six LS modules play important roles in helping students to develop the skills and conceptual understanding necessary for good enquiry. Hence this project will provide learning

and assessment support for all components of the subject for the entire duration of three years.

3. *Use of Web 2.0 technologies.* Technologies such as wikis (e.g., *Wikipedia*) are interactive, and can be used to support a range of collaborative learning activities such as peer review, shared bookmarking, communal tagging. These technologies are easily available as “open source” and can be modified to be components of an integrated and interactive system to support enquiry. By beginning from open source software, we will substantially reduce cost as compared with developing proprietary software as well as reduce the threats to the sustainability of the software. Also, it will provide an opportunity for students to be fluent with the constructive use of the latest technologies for learning, communicating and the creation of knowledge products as an outcome of their enquiry.
4. *Teacher network for deepening and scaling up curriculum and pedagogical innovation in LS.* This project will build on our successful experience in an EDB-funded Knowledge Building Teacher Network project in CITE which is providing support for a network of teachers who are developing expertise about how to support and assess enquiry in a range of subjects at both primary and secondary levels.
5. *Development of learning technologies and digital curriculum resources as an iterative process integral to the process of pedagogical innovation.* The project will involve teachers as *key collaborators in the design process*, and will use several iterative cycles of design and evaluation to develop the support systems. This differs from existing development processes in which software is usually developed in-house and is then tested by potential users. The advantage of such an approach is 3-fold: (i) a much more user-friendly system, (ii) a system that will be amenable to further extensions by users, and most importantly, (iii) the technology platform as well as the teacher network will be a valuable “blended” (or 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.

This project builds on and incorporates the best of relevant education research, including research on knowledge building, scaffolding, reflection, learning communities, professional development and management of innovation. For example, we know from decades of research that students do not “naturally” engage in effective enquiry or argumentation, so learning tasks and online modules will be created to support learning and assessment strategies that will help students to develop such skills.

## **2. Needs Assessment and Applicant’s Capability**

This project will address several important needs identified by collaborating teachers and principals and our own observations. We highlight three areas of need: *archiving and management support*, *pedagogical support*, and *assessment support*.

### *Archiving and management Support*

After the introduction of the NSS, each LS teacher will need to guide, provide feedback on, and formally assess dozens of projects a year (and report grades at three stages to the HKEAA). Clearly, a technological system is needed for *archiving and managing* the projects with respect to the project status, feedback from teachers (and possibly peers and others within or outside the school) as well as revisions undertaken at different stages of the project process. Below is a partial list of features for the ELAS, suggested by the collaborating teachers:

- Storage area for teachers to upload relevant information, including any instructions (like web quest), for the IES.
- Storage areas for students to keep project resources and work-in-progress. The latter is for teachers’ review.
- Templates for creating questionnaires, summaries and/or conclusions.

- A discussion/collaboration environment for sharing information and ideas, debating issues and co-construction of learning products
- Metacognitive tools such as scaffolds and tags to support (individual and group) reflection as well as self- and peer- assessment
- As far as possible, Web-2.0 applications such as blogs, wikis, social book marking, folksonomy tags and RSS feeds will be adopted/adapted to achieve the above functionalities. (This will reduce development and maintenance costs as well as take advantage of the popularity of web 2.0 applications among students and teachers to reduce the cognitive load in learning to use the system.)
- Statistical and management tools that teachers can use to monitor students' engagement in various ELAS supported tasks and activities, including features of their online discussions. Information such as the nature, frequency and patterns of students' online engagement and the quality and depth of their online contributions will assist teachers in making pedagogical and assessment decisions.
- A portfolio environment – students will be able to use this function to build up their own learning portfolio by collating various elements of their work and others' contributions and comments, and to add annotations and reflections as necessary.
- A summary tool that contains relevant quantitative information and qualitative annotations for monitoring project progress of particular students, specific groups or a class of students.

Surveys on ICT use by teachers found that the technical knowledge of teachers is not always strong. Hence, the system needs to be easy to use for both teachers and students. Continuous engagement and input from seconded teachers in the iterative development process will ensure that feedback from both students and teachers will be gathered and used to improve the design of the system.

#### *Pedagogical Support*

The use of enquiry as a major learning method will require new teaching strategies. The project will develop several collections of instructional materials and learning tasks as well as accompanying professional development to help teachers develop their repertoire of techniques and resources for the teaching of enquiry. Several specific areas where such developments are identified as needed are as follows:

- *Ability to read critically.* Teachers and principals partnering with us have indicated that students' ability to read and interpret information critically is often inadequate for LS and will need to be developed. Students also do not naturally learn how to engage effectively in argumentation and enquiry simply through being asked to undertake such tasks. Specific resources and learning tasks are necessary to help students develop such abilities progressively over time. Specially designed scaffolds would also be integrated into the system to encourage students to make use of the critical reading skills they learnt from these tasks when they read for completing their IES projects.
- *Information literacy.* Research on students' general information literacy skills and observations of students' performance in the existing LS (elective) course suggest that students' levels of information literacy are generally inadequate. In particular, they have difficulties in evaluating information from different sources, knowing how to make use of gathered information for critical argumentation and productive problem solving, as well as how to communicate their learning outcomes effectively using a variety of media without infringing intellectual property rights. Again, purpose-designed resources, learning tasks and scaffolds will be developed to help students develop the necessary information literacy skills.
- *Question-posing and logic of enquiry.* As mentioned above, Hong Kong students are not used to critiquing information gathered through books, media and other sources. An even greater

challenge to them is to be able to identify worthwhile and achievable enquiry questions. Hence teachers have also expressed concerns about students' ability to pose questions that are suitable for enquiry, and to be able to work out an appropriate method and process to conduct an enquiry. In fact, there is also much research showing that students do not naturally engage in evidence-based enquiry but that such abilities need to be developed. Hence, some shorter enquiry tasks will be designed to provide opportunities for students to incrementally develop their understanding, confidence and skills for enquiry, including how to develop researchable questions from an authentic problem, identifying the necessary information/data source to address the enquiry problem, how to collect and analyze data and how to draw appropriate and valid conclusions. In conjunction with these learning tasks, accompanying learning resources and metacognitive scaffolds will also be developed to support the learning process.

LS is based on a foundation of academic knowledge gained in other subjects – there is no taught content *per se* in LS. However, learning experiences that are designed to address the above issues need to be infused into the student activities to gradually develop students' enquiry abilities. Thus we see goals to develop abilities in critical reading, question-posing, and so on, as a line that runs through the LS experience, but always in the context of the actual learning experiences and IES – not as abstract, context-free curriculum. In essence, the materials and practices we will develop embody an educational theory – knowledge building – which emphasizes self-directed learning, collaboration, knowledge construction, and argument. Hence it is important to link the above components seamlessly with the pragmatics of the LS curriculum specification. Specifically, IES begins in Secondary 5 which is a different mode of learning from the Areas of Study that begins in Secondary 4. Hence, the 3 kinds of learning tasks, resources and scaffolds will be integrated into the learning activities in the designated Areas of Study that begins in Secondary 4. However, these will not be designed as rigid “curriculum units,” but that the resource materials and scaffolds can be flexibly adapted by teachers into the 3 year LS curriculum as needed. The learning gained as well as the learning resources and scaffolds used in this stage will become the foundation upon which the IES can build on.

In addition to the creation of the online platform and resources to support the teaching of enquiry, professional development will be organized to familiarize teachers with the logistics and skills in guiding enquiry as there are many skills that are otherwise not required in the predominant teaching modes in Hong Kong.

#### *Assessment Support*

We have identified three types of need regarding assessment.

- *Rubrics.* Teachers have noted that good rubrics are needed that can help with assessment of IES projects.
- *Samples.* Actual, completed IES projects and other assignments are needed with a range of performance levels. These can help students and teachers see what is possible.
- *Assessment practices.* Projects can take many forms and be carried out on different topics. Research on portfolios has shown that these features make this form of assessment difficult to operationalize, in particular for summative purposes. As IES is the SBA for LS such that the IES grade will be combined with the public examination result, this poses a particularly important challenge. Professional development is hence necessary to help teachers become competent in assigning fair and consistent grades.

As the LS subject is new, much of what is good practice has to be developed through a process of innovation, the above needs cannot be adequately addressed by training courses or one-off workshops. This project thus proposes to establish a teacher network to develop, test, and implement instructional materials and practices. Teacher networks have been shown to be highly

effective for spreading innovative teaching, both in Hong Kong and abroad (e.g., *Tapped In™*).

*Building on related project and expertise in the Faculty of Education, HKU*

A team of colleagues from the Faculty of Education, University of Hong Kong led by Mr. Gwyn Edwards, is currently commissioned by the EDB to develop an integrated framework for teaching and learning in liberal studies. We will seek to incorporate the findings and results of this project.

*Project Team*

The project team is extremely well prepared for this project. First, CITE has an excellent track record in collaborating with the community to develop innovative teaching as well as developing new educational technologies. For example, its *Interactive Learning Network* (ILN) is an award-winning learning management system. The team also has a decade of experience in researching and working with teachers to develop and disseminate good practices in knowledge building, reflection, and higher-order thinking. An on-going EDB-funded project, the Knowledge Building Teacher Network (KBTN for short), which builds on an earlier QEF-funded project (*Establishing a Scalable Network of Knowledge Building Schools*, project code 2003/0410), now in its second year, has been well received by the community and much appreciated by EDB colleagues. The KBTN project focuses on developing effective curriculum designs as well as scaffolding and facilitation strategies to support student-directed inquiry and has already yielded a diverse arsenal of teaching and assessment strategies, tested curriculum ideas and resources for supporting knowledge building. The teachers participating in this project has demonstrated through their practice that knowledge building is an approach that can be implemented in Hong Kong classrooms to support student inquiry and at the same time help students to achieve improved examination results. Requests from new teachers to join the network exceed substantially what we could have anticipated when the project proposal was submitted to the EDB just over a year ago. Finally, there is considerable potential for generating spin-off projects and even dissertations that further put expertise on enquiry in schools, via the M.Sc. Programs in IT in Education and Library and Information Management and the M.Ed. in LS program in the Faculty of Education.

Another important strength in CITE is the expertise it has in knowledge management in education and in data-mining of computer-supported collaborative learning data, which is hard to find in combination with the strong pedagogical and learning technology expertise that CITE is known for. These are very valuable in helping to design and develop a system that can effectively support the archiving, management, pedagogical and assessment functions in an integrated system.

**3. Targets and expected number of beneficiaries**

The immediate beneficiaries are LS teachers and their students involved in the project. In Year 1 we expect to be working with 3 to 5 secondary schools and in Years 2-4 with 10 to 12 schools; it is expected that the specific number of teachers involved in each school may differ and will also change as the project progresses. It is expected that there will be a full-time equivalent of up to one seconded teacher from each school. However, it is also expected that all of the seconded teachers will still have at least an equivalent of a half-time teaching load so that they will be able to implement the curriculum ideas and the online platform and resources with their students. A team approach is encouraged within each school so that more than one LS teacher will be involved in the project. The proposed start date of the project is 1 year and 4 months before the launch of the NSS. During the first 16 months of the project, pilot testing of the online platform and resource materials will mainly be with the secondary 3 students. From September 2009 onwards, the implementation of the system will progress on an annual basis so that by September 2011, all classes in the senior secondary section of the participating schools will be using the ELAS in their learning of LS. The project needs to have full support from the school leadership of each participating school so that by the end of the project all of the LS teachers will be using ELAS in their teaching of the subject. Hence, the number of teachers and students involved in the project from each participating school

will be increasing on a yearly basis. Furthermore, while it is expected that each participating school may contribute up to one full-time teacher to the project during the project period, the actual number of teachers involved in the secondment arrangement may differ from year to year to suit the project and school development needs. The teachers collaborating on the project are expected to grow professionally through their involvement in designing the ELAS and curriculum content as well as through working with teachers in other schools.

Towards the end of Year 2 (i.e. around May - July 2009), the ELAS system and the first two years of implementation experience can be disseminated beyond the project schools. It is anticipated that the ELAS systems can be extended for use by more schools beyond the project schools if so desired. However, additional resources will be necessary to provide the necessary professional development and technical support for additional schools.

Close communication and liaison will be maintained with the LS subject team of the CDI throughout the project process so that:

1. the project team can learn from the best practices developed by LS teachers in the territory, especially those who had worked with the LS team in the CDI, so that the good curriculum resources and successful experiences can be incorporated into the ELAS systems;
2. colleagues in the CDI supported LS implementation and assessment in schools will participate in the monitoring and steering of the project to ensure that the outcomes of the project will serve the needs of LS teachers; and
3. recommendations for the dissemination and further scaling up can be considered within the framework of CDI's regular support services to schools.

Potentially all Hong Kong schools can benefit from the project outputs. In addition to collaborating with the CDI to develop dissemination plans for scaling up the number of ELAS users, plans will also be made with the EDB on ways to maintain the ELAS system and the teacher innovation network beyond the project period to ensure that the project outcomes can be sustained. Further, CITE will readily transfer the ELAS server with all materials and software developed in the project to QEF or any other institution per QEF's instruction.

The platform and network that is being proposed here will be custom designed to support inquiry based learning which would be of value to other subject areas in Hong Kong schools. These resources can be easily adapted and extended for use in other curriculum areas.

#### **4. Extent of Teachers' and Principals' involvement in the project**

The project will use iterative cycles of design, implementation and evaluation to develop the systems, instructional materials, and practices. In this, teachers are much more than cooperating in implementation partners. Their role as collaborators is *essential* to the project, especially in contributing to the design and evaluation in each cycle. For example, collaborating teachers are expected to suggest ways they would like the platform to take advantage of Web 2.0 technologies, suggest specific functions in the technology, and give feedback on their usability. LS teachers also are important sources of information about curriculum, pedagogical and assessment issues in the implementation of LS in the NSS.

**5. Implementation Plan with Time-line (Phase I)<sup>1</sup>****Timeline of project implementation**

Project period	Description	Project activities
<b>Phase I</b>		
1 September 2008 to 31 December 2008 (4 months)	Preliminary design & development.	<ul style="list-style-type: none"> <li>• Consultation with teachers; design and development of basic functions and features of ELAS and some learning tasks and resources suitable for use in the first year of the NSS LS curriculum. Preparation for field testing, including professional development workshops for all teachers who will be field testing from September 2008)</li> <li>• A steering committee including officers from LS team in CDI, principals, teachers and consultants will be set up to guide and monitor the whole project to ensure that there is sufficient quantity of learning tasks, curriculum resources and metacognitive scaffolds</li> </ul>
1 January 2009 to 30 June 2009 (6 months)	First trial implementation of some core elements in ELAS; further development of ELAS	Testing and evaluation of the main components of the system and the core learning tasks, resources and scaffolds. Further design and development of ELAS into a fully integrated system on the basis of the trial implementation results
1 July 2009 to 31 August 2009 (2 months)	Preparation for formal launch of ELAS for LS in NSS	Professional development workshop for teachers who will implement in Sept. 2009, stress test and system refinement in preparation for full launch.
1 September 2009 to 30 June 2010 (10 months)	Formal launch of ELAS for LS in the 1 <sup>st</sup> year NSS curriculum; further development of ELAS to support IES  Jan/Feb 2010 – review of project progress and application for build-on project extension to 2012	Implementation and evaluation of ELAS in the 1 <sup>st</sup> year NSS curriculum. Design and implement further functions and resources on ELAS to provide specific learning, facilitation and assessment support for IES.
1 July 2010 to 31 August 2010 (2 months)	Preparation for extension of project implementation into 2 <sup>nd</sup> year of NSS*	<ul style="list-style-type: none"> <li>• Professional development workshop for teachers who will implement in Sept. 2009, stress test and system refinement in preparation for launch of ELAS for learning at Secondary 5 level. Refinement of ELAS based on user feedback. Territory wide dissemination activities in collaboration with LS team in CDI.</li> <li>• By the end of the project, the steering committee will give advices on how to ensure the continuous addition of the resources after the project period and quality control over new additions</li> </ul>

\* In the event that the build-on project application is not supported, the project team would make all efforts to summarize experience gained and to package all materials for transfer to QEF.

<sup>1</sup> This project internally is a four-year two phases project. By the end of first year steering committee will have an evaluation on the project and will seek funding source for the phase II. Phase II is a two-year project (Detailed timeline and the expected deliverables for phase II are listed in Appendix 1,

## **6. Expected Deliverables and outcomes**

The deliverables are:

For Phase I:

1. ELAS: An integrated learning and assessment platform which uses Web 2.0 technologies and contain custom designed learning tasks, curriculum resources and metacognitive scaffolds to provide archiving, management, pedagogical and assessment support for LS up to year 1 of NSS.
2. A teacher's guide for ELAS (on all functions developed in phase I)
3. A server guide (only necessary if there is no build-on project extension)
4. Modifiable and extendable instructional materials to support enquiry learning (for year 1 of NSS)
5. Rubrics, samples of work, classroom video and interviews for use by teachers and teacher educators
6. Annual dissemination seminars in 2009 & 2010.

## **7. Budget for Phase I**

The budget is shown on the following two pages. The four-month of the first year is for initial development followed by one year and 8 months of continuous development through iterative cycles of design, implementation and evaluation in close collaboration with *seconded teachers*. The costing for seconded teachers (2 FTEs in Years 1 and 2) and a budget for employing supply teachers to relieve the work of school teachers who contribute to the work of the project on an occasional basis is included.

**Learning 2.0: an Online Platform and a Teacher Support Network for Curriculum and Assessment  
Innovation in Liberal Studies for the NSS Curriculum  
Phase I (1 Sept 2008 to 31 Aug 2010)  
Budget breakdown**

		1 Sep 2008 – 31 Aug 2009	1 Sep 2009 – 31 Aug 2010	
		Year 1 (12 months)	Year 2 (12 months)	Total
<b>1.</b>	<b>Staff cost</b>			
	<i>Project staff salary * (Note 1) *</i>			
a.	Computer Officer (CO) start at pt 1 (0.25 CO in Year 1 & Year 2)  Year 1: \$9,962 per month in the first 7 months; \$10,589 for the last 5 months Year 2: \$10,824 per month in the first 7 months; \$11,507 for the last 5 months	\$122,679	\$133,303	\$255,982
b.	Programmer (ITO) start at pt 3 (1 ITO in Year 1 & Year 2)  Year 1: \$20,040 per month for the first 7 months; \$21,305 per month for the last 5 months Year 2: \$21,867 per month for the first 7 months; \$23,247 per month for the last 5 months	\$246,805	\$269,304	\$516,109
c.	Media Designer (MD) start at pt 3 (1 MD in Year 1 & 0.5 MD in Year 2)  Year 1: \$20,040 per month for the first 7 months; \$21,305 per month for the last 5 months Year 2: \$10,934 per month for the first 7 months; \$11,624 per month for the last 5 months	\$246,805	\$134,658	\$381,463
d.	Project Manager (ARO) start at pt 1 (1 ARO for Year 1 & Year 2)  Year 1: \$29,652 per month for the first 7 months; \$31,521 per month for the last 5 months Year 2: \$33,669 per month for the first 7 months; \$35,789 per month for the last 5 months	\$365,169	\$414,628	\$779,797
e.	Research Assistant (RA) start at pt 1 1 RA in Year 2  Year 2: \$16,112 per month for the first 7 months; \$17,131 per month for the last 5 months	\$0	\$198,439	\$198,439
f.	Part Time Research Assistant (RA) start at pt 1 354 Hours in first 10 month in Year 1  Year 1: \$90.50 per hours	\$32,055	\$0	\$32,055
<b>Sub-total</b>				<b><u>\$2,163,845</u></b>

	1 Sep 2008 – 31 Aug 2009	1 Sep 2009 – 31 Aug 2010	
	Year 1 (12 months)	Year 2 (12 months)	Total
<b>2. Equipment &amp; software licenses</b>			
a. Quad Core server at year 1	\$50,000		\$50,000
b. Backup & storage NAS (3~4TB)	\$50,000		\$50,000
c. UPS	\$10,000		\$10,000
d. Macromedia Flash media server (software)	\$40,000		\$40,000
e. e. Window 2003 server and other contingency	\$20,000		\$20,000
f. f. Hardware server (for media)	\$40,000		\$40,000
<b>Sub-total</b>			<b><u>\$210,000</u></b>
<b>3. General Expenses * (Note 2) *</b>			
a. 2 Professional Development workshops (3 hours & 30 teachers each workshop) in each year	\$21,000	\$21,000	\$42,000
b. Dissemination seminar in year 2 onwards (once per year)	\$0	\$33,700	\$33,700
c. Travelling expenses & miscellaneous costs etc.	\$26,000	\$20,000	\$46,000
<b>Sub-total</b>			<b><u>\$121,700</u></b>
<b>4. Services</b>			
a. Consultancy fee * (Note 3) * 6 consultants @\$15,000 in Year 1 6 consultants @\$10,000 in Year 2	\$90,000	\$60,000	\$150,000
<i>Seconded teachers &amp; supply teachers salary</i>			
b. Seconded teachers participating in the project compensation for school to recruit supply teacher (GM)	\$547,920	\$547,920	\$1,095,840
c. Supply teacher to be hired when seconded teachers are engaged in project work Year 1: 100 days at \$1,153 /day Year 2: 55 days at \$1,153 /day	\$115,300	\$63,415	\$178,715
d. Administration Charges	\$126,000	\$126,000	\$252,000
<b>Sub-total</b>			<b><u>\$1,676,555</u></b>
<b>5. Contingency (~3%)</b>	\$14,000	\$14,000	<b><u>\$28,000</u></b>
	<b><u>Total per year</u></b>	<b><u>\$2,036,367</u></b>	<b><u>\$4,200,100</u></b>
<b>Notes:</b>			
1.	The staff costs above have included a 6.3% cost of living adjustment as effective on 1 April of each year. A salary increment will be granted after each year of service.		
2.	General Expenses for: (a) 2 Professional Development Workshop, including room rental, instructors fee, preparations of workshop materials, technical support for the workshop and other misc. expenses (b) Disseminations Seminar, including room rental, speakers fee, preparations of workshop materials, technical support for the workshop and other misc. expenses (c) Travelling Expenses for team members, consultants for conducting technical visits to schools, meeting and interviews with schools principals and teachers as well as collect evaluation data.		
3.	6 consultants providing advices on technical and pedagogical aspects to the project		

*Staff costs*

This is a large project which will (1) develop a cutting-edge technological environment for supporting enquiry, collaboration, and assessment, (2) develop user adaptable and extensible learning packages, and (3) provide extensive professional development and establish a teacher innovation network for sustaining and scaling up the innovative practices and use of the technology platform to the wider school community. It requires high levels of expertise in several areas. As the overall system design and project management (technical) loads will be extremely heavy from the start to the initial launch of the system,  $\frac{1}{2}$  computer officer will be necessary for the period September to December 2008. For the technological development from the start of year 1 onwards and throughout the project, we require  $\frac{1}{4}$  computer officer to supervise and manage the design and implementation of the ELAS platform and its components.

A full-time programmer is required throughout for developing the ELAS software. This person must be an experienced developer of web-based software applications, including Web 2.0-based applications.

In addition to software robustness and functionality, an appealing, easy-to-use and user-customizable interface will be very important to ensure ease of use and a highly satisfying user-experience. Hence a media designer is also needed (FT till the end of Year 1, then  $\frac{1}{2}$ -time). This person will be responsible for designing the human-computer interface and multimedia components/resources in ELAS.

Both the technical and professional development aspects of the project need high levels of academic and professional input for the targeted goals to be accomplished. At the moment, 6 teaching members of staff in the Faculty of Education, including full and associate professors has agreed to provide consultancy and support to this project. As can be seen from the budget, the consultancy fee budgeted is minimal, to provide funds to consultants for buying-out of their teaching time, hiring of teaching assistantship and other forms of staffing support for them in their daily work at the University.

A full-time project manager is needed throughout the project for liaising with the project team, including seconded teachers and their schools to ensure that the ideas and recommendations from the consultants are appropriately implemented. The project manager will also be responsible for overseeing the preparation of workshops and dissemination seminars, editing content, and research tasks such as formative evaluations of the technical usability of ELAS, questionnaire design and analysis and interviewing. This person must have strong managerial skills, excellent communication skills in Cantonese as well as English, strong knowledge of curriculum reform in Hong Kong, and ability to conduct small research tasks independently. For this reason, a research officer is required. From year 2 onwards when the NSS LS subject is formally launched, a research assistant will also be needed to assist the project team with the field evaluation of the platform and learning tasks/resources as well as various research and curriculum development activities.

It is essential that the project can support a talented team that is stable throughout the project. Because the economy is very strong and talented people have many opportunities in the private sector, we hope to create a project that will provide an exciting environment for the staff, with challenging tasks and excellent opportunities for professional growth. To retain people with good quality to work in this project, the salary must be competitive to the market price. This also helps the smooth implementation of the project if the turn over rate of project staff is reduced to the minimum throughout the whole project period. The grades of appointment we seek are necessary for all these reasons. The salaries are standard rates based on university salary scales for comparable appointments, including a 6.3% COLA, a modest increment which is normally given when staff have completed a performance review exercise according to the University regulations after each year of service, and a gratuity at the end of the project.

Though the setting up of a server for ELAS that can serve all the project schools and the development

of the online platform and digital learning tasks and resources are core to the project, we have kept the hardware and software costs very low by using as far as possible open-source tools. In Year 1 these costs are higher than in second year due to the start-up costs which include hardware for the ELAS server and a media server and productivity software for multimedia development. The budget also includes modest costs for workshops for teachers and dissemination seminars, traveling and miscellaneous expenses.

In addition to the various costs described above, the smooth running of the project would require clerical and administrative services such as human resource, accounting and technical support for the project team. In addition, the project team would need basic office equipment such as PC workstations, printers, fax machine, etc. In order to minimize the tedium of having to set up a separate budget for acquiring the necessary equipment and the staff costs for technical, clerical and administrative support, it would be more cost-effective for the project to purchase services and use of equipment from CITE. For this we have built in \$252,000 under the category administration Charges.

The project is carried out in collaboration with several secondary schools that have contributed significantly to the conceptualization of this project. Deep engagement of experienced LS teachers in the entire project process including the design of ELAS functions, the development of curriculum resources and activities as well as the evaluation of the online activities and resources through trial use with students is critical to the success of the project. Hence the secondment of experienced LS teachers to work in this project is extremely important. We have already obtained support from the principals of participating schools that they will arrange for their teachers to contribute in the project. Secondment arrangements may vary from year to year in different schools but the collaborating schools will work as a team so that together, 2. fte secondment will be shared among them in years 1 and 2 of the project. A budget for 100 days and 55 days of supply teaching is also budgeted in years 1 and 2 respectively to allow for teachers participating in the project intensively during occasional periods of time. The seconded teachers will meet regularly with the project team to contribute to the design of the platform, give feedback to its functions, assist in organizing professional development workshops and dissemination seminars. The salary rate for these follows the pricing standard of QEF.

### **8. Evaluation Parameters and Method**

Evaluation of the project will focus on the quality of the deliverables. We will conduct formative evaluations throughout the project to assess quality. For example

- A steering committee including officers from LS team in CDI, principals , teachers and consultants will be set up to monitor and evaluate the progress of the project
- Questionnaires will be used to evaluate the usability of ELAS, the instructional materials, samples and rubrics, as well as the usefulness of workshops
- We will demonstrate ELAS at seminars and conferences to gain feedback and seek an external peer review of ELAS and its associated materials (e.g., teacher's guide, content)
- Student results in LS will be reviewed as an outcome of LS Scaffolded by ELAS and associated materials. We will examine both cognitive outcomes (what students learn) and the extent to which students reflect on their learning and use formative assessment results to improve learning
- Questionnaires, interviews, and similar methods will be used to evaluate developing practices with ELAS among teachers to support and assess enquiry learning in LS

At the end of the project we will also subject ELAS to a peer review by experts in educational technology. We expect that the project will be the basis of some dissertation studies, which will further help too examine the educational significance of the deliverables (e.g., studies of teachers' approaches to guiding and assessing enquiry in LS.)

**9. Sustainability of the Outcomes of the Project**

We expect the project outcomes to be sustainable and scalable. ELAS itself will be 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. ELAS and associated materials will be flexible enough to be useful in other contexts than LS as well, such as SBA in a variety of subjects and enquiry in science and mathematics teaching. 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.

**10. Dissemination / Promotion**

The results of the project will be widely disseminated. We will have an annual dissemination seminar at the end of Year 2. If the project is continuously supported by QEF fund for the Phase II then dissemination seminars will also be conducted in Year 3, and Year 4. We will work in close collaboration with the LS team in CDI to plan such dissemination activities to ensure that appropriate follow-up actions and support could be given to teachers outside of the project schools who are interested in using ELAS in their own classes. We hope that the system can be available for use by LS teachers in all secondary schools in Hong Kong and we will again work closely with EDB colleagues to work out the best way to achieve this. Obviously, arrangements need to be made with regard to the maintenance and support for the ELAS system after the project ends. CITE will conduct the necessary hand-over of the system as per instruction received from QEF at project completion.

## Appendix 1 Details of Phase II

**Timeline of project implementation**

<b>Phase II</b>		
1 September 2010 to 30 June 2011 (10 months)	Implementation of ELAS in Secondary 4 & 5; further development of ELAS to support the final year of the LS curriculum, in particular the use of ELAS for SBA assessment & portfolio development	Implementation and evaluation of ELAS in secondary 4 & 5 levels in the NSS curriculum. Design and implement further functions and resources on ELAS including e-portfolio and additional functions to support SBA assessment.
1 July 2011 to 31 August 2011 (2 months)	Preparation for full scale implementation of ELAS throughout the 3 years of the NSS curriculum	Revision of all materials; professional development workshops and dissemination seminar; preparation for full project evaluation
1 September 2011 to 31 August 2012 (12 months)	Full launch of all project components; summative evaluation of project; further dissemination	Full launch of all ELAS components and functionalities throughout the entire 3 years of the LS curriculum in NSS. Overall summative evaluative of the project and its components. Territory-wide dissemination of ELAS system, its components and use, as well as the project evaluation outcomes.

## Expected Deliverables and outcomes for Phase II:

1. ELAS: An integrated learning and assessment platform which uses Web 2.0 technologies and contain custom designed learning tasks, curriculum resources and metacognitive scaffolds to provide archiving, management, pedagogical and assessment support for the entire NSS curriculum.
2. A teacher's guide for ELAS
3. An ELAS server guide for technical support staff
4. Modifiable and extendable instructional materials to support enquiry learning for use in the entire NSS LS curriculum.
5. Rubrics, samples of work, classroom video and interviews for use by teachers and teacher educators
6. Dissemination seminars in 2011 & 2012.
7. Large scale Dissemination event(s) at the end of the project to disseminate the project outcomes to all Hong Kong schools