Quality Education Fund
Application

2009/0314
(Revised)

Game-based Collaborative Inquiry Learning between Hong Kong and Beijing Primary Schools

Part C Project Details

1. Goals and Objectives

This project aims at promoting the establishment of learning partnerships among Hong Kong and Beijing schools for motivating Primary-5 students to participate in collaborative inquiry learning (CIL) by engaging them in an online interactive game-based learning environment—*Learning Villages (LV)* [1]. Specifically, it focuses on achieving the following objectives:

i. To activate students' interest in collaborative inquiry learning.
ii. To promote cultural exchange between students from Hong Kong and Beijing.
iii. To facilitate students to acquire subject-specific knowledge in the KLA (Key Learning Area) of Personal, Social, and Humanities Education at the level of Hong Kong Primary-5 Education.
iv. To enhance students' higher-order thinking skills for problem solving.
v. To establish networks of learning among schools in Hong Kong and Beijing.
vi. To study the effectiveness of collaborative inquiry learning through an online interactive game-based approach.

2. Needs Assessment and Applicant's Capability

2.1. Needs Assessment

The current project proposes the use of Learning Villages (LV) to motivate and engage primary students from Hong Kong and Beijing in pursuing CIL for achieving the goals and objectives mentioned in Section 1. The proposed content of students' CIL project work is shown on the appendix (Page 17 of this document). The followings are the rationales of this project:

Benefits of Collaborative Inquiry Learning

Knowledge cannot be separated from why and how it constructs (Dewey, 1938); for years, there has been advocacy of constructivist approaches to education (Jonassen & Howland, 2003; Piaget, 1970). *Inquiry learning* (Papert, 1980, 1993), a constructivist learning approach, emphasizes students in the course of learning should discover and develop knowledge rather than being presented with information or doing paper-and-pencil exercises. In an inquiry learning process, a student cannot only deepen his / her subject-specific knowledge but also has more opportunities to enhance his / her higher-order thinking skills for problem solving (Anderson et al., 2001). Social-constructivist learning theorists (e.g., Lave & Wenger, 1991; Vygotsky, 1978) further that learning should not only be a "constructive" but also "collaborative" process. It is believed that through discussion and communication students can co-construct knowledge. Hence, the importance of engaging students in collaborative inquiry work has been emphasized significantly, and this kind of enhanced inquiry learning approach is

[1] http://www.learningvillages.com

termed *collaborative inquiry learning (CIL)*.

Benefits of Education Exchange

It has been advocated that collaborative learning taking place among students with different cultural background can help them broaden their perspectives, and hence enrich their knowledge as well as enhance their thinking skills (Scardamalia & Bereiter, 2003). In fact, not only does an inter-region collaborative learning project promote cultural exchange among students, it helps to connect schools to establish learning partnerships.

This project proposes that each participating school from Hong Kong will be matched with a school from Beijing to form a CIL partnership. In each pair of CIL partnered schools, every 3 or 4 students from each school will form an inter-school CIL team in LV to pursue issue-based discussion of an open-ended topic related to the KLA of Personal, Social, and Humanities Education at the level of Hong Kong Primary-5 Education.

Limitations of the Existing CIL Platforms

As for inter-school CIL, computer and information technology is indispensable for connecting students from different locations to communicate with one another. In fact, adopting online discussion boards as communication platforms for CIL is a typical practice (Weinberger & Fischer, 2006). For instance, students from different schools in different regions are divided into groups, and each group is assigned to discuss an open-ended issue through an online discussion board. Each student in the group composes and posts their own arguments with respect to the issue to the discussion board where his / her peers can read the arguments and then give feedback. Nonetheless, empirical evidence (Guzdial & Turns, 2000; Lee, 2006) has shown that the use of conventional online discussion boards as CIL platforms might not be able to motivate students' proactive participation in discussion in the course of CIL. Besides, Stegmann et al. (2004) observed that students usually have difficulties in making argumentative elaborations in discussion. They advocated for the provision of *scaffolds* pre-implemented in CIL platforms so as to assist students in formulating and structuring their arguments in a right way.

An Online Interactive Game-based Approach to CIL

Fun and enjoyment are essential elements in the process of learning as students can be more relaxed and motivated to learn (Cordova & Lepper, 1996). Piaget (1970) regarded curiosity as the best driving force for learning; keeping learners curious by engaging them in play-like activities is the best approach to education, and thus games are an important avenue toward learning. *Learning Villages (LV)* is an online interactive game-based learning platform for supporting CIL. Besides the injection of gaming elements, a number of scaffolds are implemented in LV so as to connect and facilitate students to pursue issue-based discussion from different schools in different regions.

Briefly speaking, LV operates in a form of massively multi-player online role-play game (MMORPG) in which each student can design his / her own virtual character (an avatar) to participate in this "virtual world." Each village in LV represents a discussion issue. Every student can build a village and take the role of *chieftain* (headman) by initiating an issue for discussion (namely, issued-based discussion). Other students can join the discussion collaboratively by entering that village, build houses and role-play as *villagers*. There is also a reputation-gaining system implemented in LV. Students can gain higher reputation by building quality villages and houses. The higher reputation a student gains, the higher status in that village he or she can achieve. As for the role of teachers, they will serve as facilitators who guide and monitor the course of students' discussion in the villages. A more detailed description of LV will be found in Section 5—Innovation.

2.2. Applicant's Capability

Centre for the Advancement of Information Technology in Education (CAITE) of The Chinese University of Hong Kong (CUHK) actively cooperates with schools in Hong Kong to organize computer-supported collaborative learning projects. One of the examples is that CAITE organized a vital QEF supported project in Hong Kong: "Global Learning Community among Primary Education through Interdisciplinary, Interschool and International Project Learning." In that project, students conducted their project learning with their partners, students from other schools in Mainland through a Web-based virtual learning community. The project involved more than 60 schools in Hong Kong and Mainland. It has been one of the most significant computer-supported collaborative learning projects in Hong Kong. In addition, CAITE completed another QEF supported project, "Project-based Learning with Learning Villages among Schools in the Mainland, Hong Kong and the USA." The project invited 15 secondary schools in Hong Kong, 5 secondary schools in the mainland and 2 high schools in the US to take part in LV. It enabled around 1,800 Hong Kong secondary school students to learn subject knowledge across the curriculum, to develop high-order thinking abilities as well as to nurture their collaborative and communicative skills.

Apart from that, CAITE successfully secured funding including the Teaching Development Grant of CUHK and the Earmark Grant of the Hong Kong Research Grant Council to develop pioneering educational applications, such as "Tong Pak Fu and Chou Heung—The Probabilistic Fantasy," and the "Virtual Interactive Student-Oriented Learning Environment (VISOLE)" respectively. The former one aimed at facilitating secondary school students' learning of probability in an authentic situation. It was field tested in schools in Hong Kong and Beijing, and was proved interesting and helpful to students. The later one provided secondary school students with an online interactive virtual world which was empirically found to be able to empower the students to acquire multi-disciplinary knowledge and enhance their higher-order thinking skills for problem solving.

Regarding the use of LV in primary schools, since 2008, there have been 5 inter-city CIL projects conducted on a self-financed basis. More than 65 schools (30 from Hong Kong, 13 from Taiwan, and 25 from the Guangdong province) have established learning partnerships through their participation in the projects.

2.3. Other Favourable Factors of the Applicant

CAITE was established in May 2005 and has taken up all the responsibilities previously done by the Information Technology in Education Unit in the Faculty of Education, CUHK. CAITE now plays a prominent role in running all the IT in Education programmes offered by the University, including Master of Arts Programme in Information Technology in Education and Advanced Postgraduate Diploma in Education (Information Technology in Education) Programme. The programmes have successfully equipped many IT in Education school leaders. CAITE also offered various courses to serve teachers under the Continuous Professional Development programme sponsored by HKSAR Education Bureau. Besides running professional development programmes, the centre is also involved in different research activities, and local and international services. Therefore, CAITE possesses the professional knowledge, expertise and network to make this project a success. As for the project team, it will be composed of the followings educational and IT professionals:

Prof. Jong Siu-Yung, Morris (Project Leader)

Associate Director, Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong

Assistant Professor, Department of Curriculum and Instruction, The Chinese University of

Hong Kong
In collaboration with various local and overseas schools and institutions, Prof. Jong has been conducting and participating in a number of IT in education research projects funded by RGC, EdB, QEF, TDG, etc., for 10 years. Since 2002, he has also been designing and teaching teacher education courses specializing in IT in education, at both undergraduate and postgraduate levels in tertiary institutions. Apart from researching and teaching, Prof. Jong is active in diverse international / global Chinese / local scholarly activities which promote the integration of IT into teaching and learning. Besides assisting in the organization of these activities, he has given more than 50 paper presentations and invited talks in international / global Chinese / local conferences, seminars as well as scholarly visits. In respect of his publications, Prof. Jong has published more than 50 journal papers, book chapters, and conference papers concerning digital game-based learning, teachers' IT competency, and technology-enhanced learning environments. Currently, Prof. Jong is on the editorial boards of a number of academic journals in the domains of digital game-based learning and virtual reality in education.

Prof. Lee Fong-Lok
Co-Director, Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong
Prof. Lee is the Programme Director for the Advanced Postgraduate Diploma in Education (Information Technology in Education) Programme and Master of Arts Programme in Information Technology in Education since 2001 and 2003 respectively. He has fourteen years of working experience in his specialist field, twenty-two years of teaching experience in local secondary schools and more than eleven years in conducting teacher training courses for local secondary school teachers. He served as secondary school teacher, extra-curricular activities master and mathematics panel chairman. Presently he is a member of the executive committee of the Global Chinese Association on Computers in Education, co-chief Editor of Global Chinese Journal of Computers in Education; president of Asia-Pacific Society for Computers in Education; Chair of the HK & Macau Chapter, Global Chinese Society on Computers in Education. His research interests include Educational Technology Cognitive Processes, Artificial Intelligence, Mathematics Learning, and Application of Information Technologies in Education.

Prof. Lee Ho-Man, Jimmy
Co-Director, Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong
Professor, Department of Computer Science and Engineering, The Chinese University of Hong Kong
Professor Lee read both his BMath (Hons) degree and MMath degree from the University of Waterloo in 1987 and 1988, respectively, and his PhD from the University of Victoria in 1992. Immediately upon graduation, he joined The Chinese University of Hong Kong. His research focuses on the theory and practice of constraint satisfaction and optimization with applications in scheduling, resource allocation, and combinatorial problems. In recent years, Professor Lee has also been conducting research on novel Web-based learning platforms and the accompanying pedagogies, particularly in the development of educational games. He is currently the Co-Director (Research and Development) of the Centre for the Advancement of Information Technology in Education under the Hong Kong Institute of Educational Research, CUHK. Professor Lee has 100 refereed technical publications in international journals and conferences, and has obtained $9 million in competitive research funding. He is on the editorial boards of the Journal of Discrete Algorithms and the Constraint Programming Newsletter. Professor Lee is active in extramural educational activities. He has taught for the Programs for the Gifted and Talented, and was the Chief Examiner of Paper II of the HK A-Level Computer Studies subject from 1995 to 2001. Inspired by his many former good teachers from elementary

school to universities, Jimmy's passion for teaching garnered him the Vice-Chancellor's Exemplary Teaching Award in 2005, and the Faculty of Engineering Exemplary Teaching Award in 1999, 2000, 2001, and 2003.

Mr. Tse Wing-Cheung, Alex
Instructor, Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong
Mr. Tse is currently a full-time instructor in Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong. He teaches the Advanced Postgraduate Diploma in Education (Information Technology in Education) Programme and Master of Arts Programme in Information Technology in Education. In addition to teaching postgraduate programmes, Mr Tse actively promotes IT in education by instructing Information Technology in Education Refresher Training Courses for School Teachers and leading IT in education projects, such as Global Learning Community among Primary Education through 3-I Project Learning.

Mr. Luk Tsun-Hin, Eric
Mr. Luk is currently a software developer and artist in the Centre for the Advancement of Information Technology in Education (CAITE). He received the Bachelor of Science in the Department of Computer Science & Engineering, The Chinese University of Hong Kong in 2004. He is the designer of the Learning Village and has taken part in the development and co-ordination of the Learning Village platform from 2006 to 2007.

3. Targets and Expected Number of Beneficiaries (Students)

Schools: 20 *(10 from Hong Kong, 10 from Beijing)*
Students: 2800 *(1400 from Hong Kong, 1400 from Beijing)*

Hong Kong	No. of Schools	10
	No. of Classes per School	4
	No. of Students per School	Around 140
	Total No. of Students Involved	Around 1400

Beijing	No. of Schools	10
	No. of Classes per School	4
	No. of Students per School	Around 140
	Total No. of Students Involved	Around 1400

4. Conceptual Framework

The theoretical foundation of *learning motivation*, *situated learning*, and *scaffolding* supports the articulation of online interactive game-based learning with inter-school CIL.

4.1. Learning Motivation

Piaget (1970) regarded curiosity as the best driving force for learning; keeping learners curious by engaging them in play-like activities is the best approach to education, and thus games are an important avenue toward learning. Based on a series of surveys, observations and interviews with gamers, Malone and Lepper (1987) put forward a motivation theory, which asserts that *challenge*, *fantasy*, *control*, *curiosity*, *cooperation*, *recognition*, and *competition* are the most significant elements that make gaming fun and engaging, and sustain gamers' continual motive. They advocated that schools should try to integrate similar gaming elements into education so as to arouse students' intrinsic motive in learning. Bowman (1982) tied his study on learning

through gaming with Csikszentmihalyi's (1975) psychological conception of *flow*. Flow is a state of experience of "*intense concentration and enjoyment.*" Under the flow state, a person will engage in a complex, goal-directed challenge not for external rewards, but simply for the exhilaration of dealing with the challenge. Bowman believed that learning through gaming is a spontaneous way to bring students to the flow state of learning. From both theoretical and empirical points of view, it is expected that students are more motivated to participate in educational activities if these activities take place in a form of gaming.

4.2. Situated Learning

Knowledge itself arises from social needs, fulfills social functions, and is tied inherently with cultural conditions (Collins, Brown & Newman, 1989). In other words, how to educate students is not seen as how to build representations in each of their heads, but how to engage them in socio-cultural activities (Lave & Wenger, 1991). Thus, learning is not just a process of mastering facts, or even conducting complex tasks, but rather, participating in socio-cultural practices. This requires learners to develop their own identity in relation to others. Most of today's gaming activities are situated socially and culturally (Gee, 2003), entwining practice, participation, community, and identity. Gamers meet online and form teams to discuss challenges, complete quests, and solve puzzles. A gaming environment enables and encourages individuals to share, discuss, evaluate and apply the collective knowledge co-constructed by the gamer community (Antonacci & Modaress, 2008).

4.3. Scaffolding

Every new and meaningful learning starts from students' prior knowledge (Wellington, 2006). Novice students, like construction workers, need structures of temporary support during their efforts to build things up (Johnston & Cooper, 1997). Vygotsky's (1978) conception of *scaffolding* offers clues to frame what, how, and how much support should be given in order to activate students' prior knowledge in the course of CIL. Scaffolding refers to support to be given to students so that they can solve problems or perform tasks that would otherwise be out of reach. For scaffolding to be effective, scaffolds should be set inside students' *ZPD (zone of proximal development)*. A ZPD is the area between the level at which a student knows something or can do something on his/her own *(namely, Zone A)*, and the level of performance or skill he/she could reach if the right intervention is offered *(namely, Zone B)*. The scaffolds function as a "bridge" so as to assist students in "walking across" the ZPD, from Zone A to Zone B. In LV, a number of scaffolds (see Section 5—Innovation) are implemented so as to assist students in pursuing their issue-based discussion in CIL.

5. Innovation

5.1. Motivating Students' Participation in CIL

The current project uses an online interactive game-based approach so as to motivate and engage students in the course of inter-school CIL, through the adoption of Learning Villages (LV) as the CIL platform.

LV is an online interactive game-based learning environment. It operates in a form of massively multi-player online role-play game (MMORPG) in which each student can design his / her own virtual character (an avatar) to participate in this "virtual world" (see Figure 1). There are various entertaining elements in LV, for example, playing a range of mini-games. Participating in these mini-games, apart from earning the *passion* value for upgrading their own social status, students can also earn *learning tokens* for further participating in issue-based discussion in LV (see the following paragraphs). In this project, students from Hong Kong and Beijing can interact with one another in various "hangout places" in LV (see Figure 2 for an example). The interactions include real-time chat, making funny gestures and showing funny

emotional icons to draw others' attention, etc.

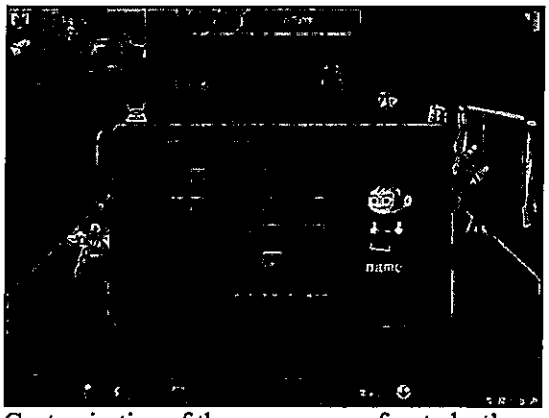

Figure 1. Customization of the appearance of a student's avatar in LV

Figure 2. Hangout in LV

5.2. Enabling Students' Two-tier Issue-based Discussion

In this project, students are enabled to pursue two-tier issue-based discussion in the course of CIL. The advantage of this kind of discussion is that, major perspectives, arguments and related concepts, as well as their relationships with respect to a discussion issue can be arranged neatly in the form of mind mapping at the first-tier of discussion (namely "village-level discussion" in LV). However, it is still handy for students to review the details of a particular perspective, argument, or concept discussed at the second-tier of discussion (namely "house-level discussion" in LV). Apart from that, both levels of discussion can take place concurrently.

In LV, each *village* represents a discussion issue (as illustrated in Figure 3). A student can create a village, taking the role of *chieftain* by initiating an issue for discussion. Any other students in LV who are interested in that issue, can become *villagers* by building houses in that village. They can use houses to elaborate, for example, their perspectives, arguments or some related concepts with respect to the issue. In addition, the villagers can build roads between the houses to interconnect different perspectives, arguments or concepts delineated in the village. They can make use of different types of roads (scaffolds, see Figure 4), namely, "Explanation," "Evidence," "Problem," "My Reply," "Solve This First," "Another View," "Compare With," and "Others" to reflect the different relationships between the elaborations represented by those houses. This is the village-level discussion.

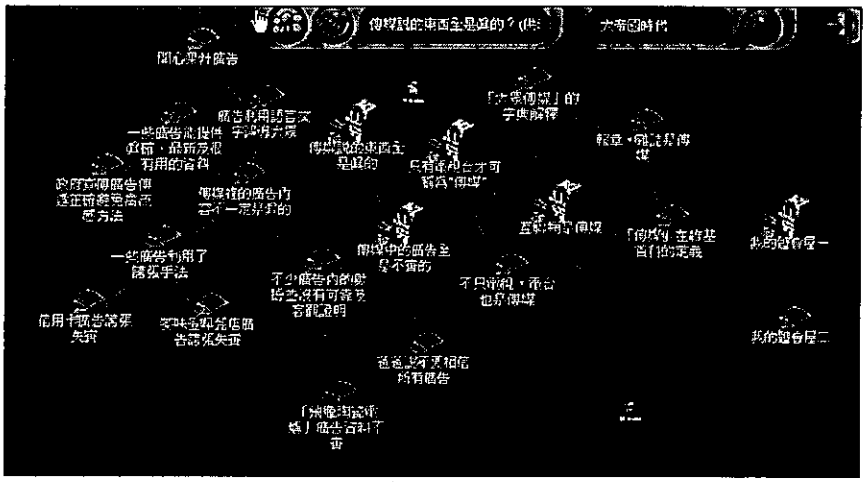

Figure 3. Village-level discussion

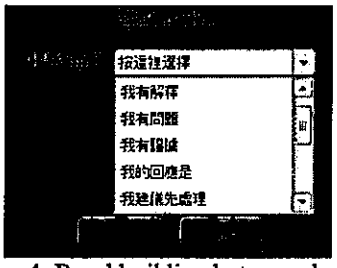

Figure 4. Road building between houses

In the village, every house is "enterable," and it functions as an individual forum to facilitate discussion on a specific perspective, argument or concept raised in the village-level discussion. In LV, the term "postings" is used to represent the discussion threads inside houses (as illustrated in Figure 5). This is the house-level discussion.

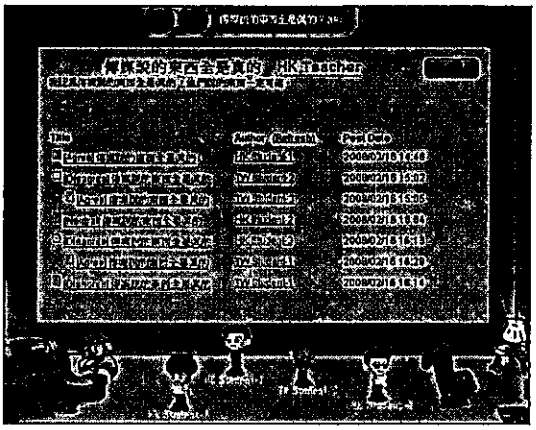

Figure 5. House-level discussion

5.3. Enhancing Students' Argumentative Elaboration

Stegmann et al. (2004) observed that the quality of students' discussion in CIL is often weak, and it is usually due to the reason that students do not know how to make argumentative elaborations in the discussion process. In this project, students will be scaffolded to formulate and structure their arguments in a right way.

In LV, a number of posting templates are provided through the clickable on-and-off window in the village for students' reference (see Figure 6). These templates aim at scaffolding students to structure their arguments (elaborating on new arguments and responding to

arguments made by others) in the course of issue-based discussion in this project.

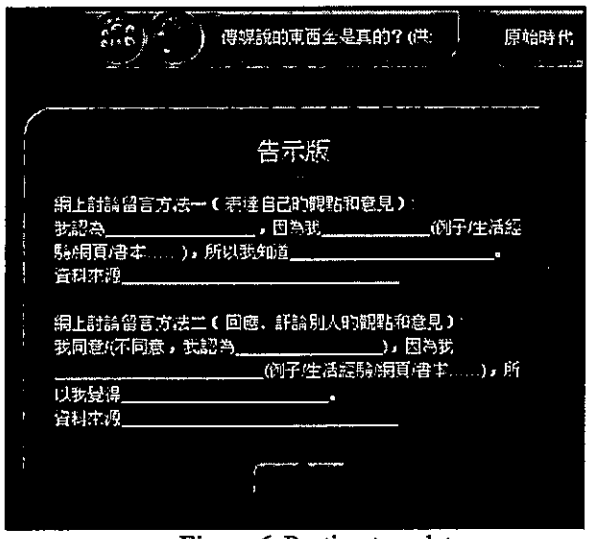

Figure 6. Posting templates

5.4. Promoting Students' Quality Discussion

This project promotes students' quality discussion in CIL with an "invest and reward" mechanism. While participating in LV, every time when a student creates a village, or builds houses in existing villages created by others, he or she has to invest their own learning token. Nevertheless, when the number of quality houses and postings in the villages (that he or she has "invested" in) reaches a certain amount, the village will be upgraded by their teachers. Benefits brought about by the upgrade include learning token reward, higher social status conferment for enjoying extra privileges (such as pet keeping) in LV (see Figure 7). This invest-and-reward mechanism stimulates students' learning motive continuously for participating in quality discussion in this project.

Figure 7. Pet buying in LV's shop

6. Extent of Teachers and Principals' Involvement in the Project

Teachers' Involvement

- Getting accustomed to use LV and to take the role of CIL facilitators.

- Forming partnerships with the participating teachers from Beijing on project planning and facilitation.
- Being members of the teaching teams in designing and administrating projects for students to participate in LV.
- Evaluating students' learning outcomes.

Principals' Involvement

- Providing leadership and supervision of the implementation of the entire project in the steering committee.
- Providing advice to the researchers from CAITE for evaluating the effectiveness of the project.

7. Implementation Plan with Time-line

Duration: 12 months (Oct 2010 – Sep 2011)

Preparation Stage (10/2010 – 11/2010)

- School Selection: Ten primary schools respectively from Hong Kong and Beijing will be selected. *(Remark: Department of Educational Technology from Peking University will be the non-local collaborators and assist in recruiting primary schools in Beijing.)*
- Technical Preparation: Customization of LV, creation of teachers' and students' accounts, etc.
- Briefing to Schools: Briefing will be held to introduce the details of the project.
- Formation of a Steering Committee: Principals or their representatives will be invited to form a steering committee to supervise the progress of the project
- First Meeting of the Steering Committee: Members will be encouraged to put forward their selected issues for the decision of the committee. The whole year plan, which includes detailed activities, project resources, collaborative activities and the expected learning outcomes, will be discussed.
- Training: Training sessions will be conducted for teachers from Hong Kong to master the related concepts and how to facilitate CIL learning in LV.
- First Educational Visit to Schools in Beijing *(10/2010, 3 Days)*: The project team *(the project leader, coordinator and technical officer)* will visit the collaborating schools in Beijing to discuss and plan the project topics and collaboration details. Teachers from Beijing will be trained to facilitate the project. Teacher representatives from Hong Kong will participate in this visit too.

Implementation Stage (12/2010 – 6/2011)

- Teachers from Hong Kong and Beijing will start implementing the project. They will:
  - *Give briefing to students on the study plan.*
  - *Set up various villages and houses in LV to facilitate students' issues-based discussion.*
  - *Hold training sessions for students to familiarize them with LV.*
  - *Start the online collaborative inquiry process.*
  - *Monitor students' learning progress (in classrooms and online).*
  - *Supervise students to create learning artifacts and summarize their learning outcome.*
  - *Evaluate students' learning outcomes with learning rubrics.*
  - *Help evaluate the effectiveness of the project.*
- Second Educational Visit to Schools in Beijing *(12/2010, 3 Days)*: Students with teachers from each school will visit their matched school in Beijing. This provides students with a chance to get to know their collaborating partners and exchange views and experience. The project team will also take part in the visit so as to monitor the progress of the project, and ensure smooth collaboration of students in Beijing with those in Hong Kong.

- Evaluative research will be conducted to study the effectiveness of the project. *(Please refer to Section 10—Evaluation Parameters and Method.)*

Completion Stage (7/2011 - 9/2011)

- Beijing Schools' Visit to Hong Kong: Teachers and students from the participating schools in Beijing will visit Hong Kong to attend the dissemination seminar. They will share their views and experience, as well as exhibit their practices.
- Dissemination Seminar: A dissemination seminar will be organized to allow the participating schools to exhibit and share their outstanding practices. Teachers and other educational professionals will be invited to participate so that the idea of online interactive game-based CIL can be disseminated to the public. Representatives from Peking University will be also invited to attend the seminar.
- Report Writing: A project report will be prepared to summarize the project objectives, process, and outcomes of the whole project.

8. Expected Deliverables and Outcomes

Outcomes

- Around 2800 students (1400 from Hong Kong, 1400 from Beijing) with enriched subject-specific knowledge and enhanced higher-order thinking skills.
- Around 80 well-trained teachers (40 from Hong Kong, 40 from Beijing who are able to facilitate students' online collaborative inquiry learning.

Deliverables

- Exemplars of students' collaborative inquiry project works.
- An overall project report documented the design, implementation, and outcomes of the project.
- Local, global Chinese, and international journals discussing the findings of the evaluative study carried out in the project.

Dissemination

- Dissemination seminar held in the completion stage of the project (principals and teachers in Hong Kong will be invited to attend the dissemination seminar held in the completion stage of the project, and the exemplars of the students' collaborative inquiry project works will be presented.
- Release of students' collaborative project works on the LV website for public's reference.
- Participating teachers' experience sharing in educational seminars.
- Organiser' presentations and invited talks in academic conferences.
- Publications in local, global Chinese, and international journals.

9. Budget

Item	Description	Amount (HKD)	
A	**Staff Cost** A1. Project Coordinator: ($16,140 + 5% MPF) x 12 months A2. Senior Technical Officer: ($16,140 + 5% MPF) x 12 months	 203,364 203,364	 406,728
B	**Equipment** B1. Desktop computer set (2 sets) B2. Digital video camera	 12,000 4,500	 17,000

	B3. Tripod	500	
C	**Service***		
	C1. Teaching relief for project leader ($700 x 5%MPF x 130 hours)	95,550	
	C2. Teacher training workshop for HK teachers ($700 x 3)	2,100	
	C3. Student helpers $50 x 80 hours	$4,000	101,650
D	**General Expenses**		
	D1. Expenses related to manual printing ($60 x 40 teachers)	2,400	
	D2. Beijing Visit $4,000 x 3 people x 2 trips	24,000	
	D3. Operation costs for the dissemination seminar	20,000	
	D4. Printing and postage, stationary and other consumables (e.g. DV tapes, paper etc)	2,222	
	D5. Travel expenses for school visits, training, parking fee, fees for deliveries to schools)	2,000	
	D6. Administration and management charges	8,500	
	D7. Finance Service Support	8,500	
	D8. Faculties	6,000	73,622
		Total:	**599,000**

** The cost of platform usage ($2,000 x 4 classes x 10 HK schools = $80,000) will be covered by participating schools ($750 x 4 classes x 10 HK schools) and CAITE ($1,250 x 4 classes x 10 HK schools. In addition, CAITE will bear the cost of the server maintenance ($50,000 per year).*

Justifications:

A1 The Project Coordinator (PC) will be employed under the regulations set by CUHK. The monthly salary for PC is $16,140 which is the starting point at that rank. It is expected that the PC should be a degree holder and have some years of experience in coordinating projects of online interactive computer game-based learning. This person should have good command of spoken and written Chinese and English. Fluent Putonghua will be a must for communication with the Beijing parties. The PC will liaise with schools and teachers for project activities, coordinate seminars, help with compilation of various reports throughout the project period, and provide necessary support to the project members so as to ensure the smooth operation of the project.

A2 The Senior Technical Officer will be a university graduate with several years of experience in the field of IT in education, and possess advanced technical and design skills. Apart from filming school observations and visits, this person will also provide technical support to LV, and act as a graphic designer for the training materials and deliverables involved in the project. That is why a senior technical officer rather than a general technician is needed. Furthermore, in order to help the smooth implementation of the project, it is essential to reduce the turn over rate of project staff to the minimum. To retain people with good quality to work in this project, the salary must be competitive to the private sector.

B1 Desktop computers for the newly recruited project members are required for producing project documentation, reporting, analysis, and daily operation tasks.

B2 & B3 The digital video camera and tripod will be required to support the project team in carrying out some project activities (e.g., classroom observations in the evaluative study). Some exemplars recorded during class observations will also be shared in the dissemination seminar.

C1 This budget will be used to hire teaching assistantship and other forms of staffing support to help off load the work for the project leader so that he can develop the training materials, provide guidance for teachers to implement the project,

conduct school visits, lesson observation, etc.

C2 The training will be conducted by instructors who have expertise in facilitating CIL with LV. The cost for the teacher training workshop in Beijing will be covered by CAITE.

C3 Student helpers are required in preparation for the seminar and related activities, e.g. filming during sessions, help with registration, and other assistance before, during and after the activities.

D2 Trip 1: The project team (the project leader, coordinator and technical officer will visit the collaborating schools in Beijing to discuss and plan the project topics and collaboration details. All participating teachers from Beijing will be trained to facilitate the project. (Teacher representatives from Hong Kong will join the trip at their own expenses.)

Trip 2: The project leader will lead Hong Kong teachers and students to conduct another Beijing visit during the project implementation stage. This provides students with a chance to get to know their collaborating partners and exchange views and experience. Other project team members will also take part in the visit so as to monitor the progress of the project, and ensure smooth collaboration of students in Beijing with those in Hong Kong. (Students and teachers will join the trip at their own expenses.)

D3 The dissertation seminar will be open to public. The budgeted cost includes venue rental, light refreshment, transportation, accommodation and honorarium for inviting representatives from Peking University who will share their experience in this project.

D6 The administration and management charge includes but not limited to the general administrative services from University, contract administrative services, human resources management, etc.

D7 The financial service support will cover the running cost on accounting services (includes budget / financial statements, purchasing & payment, etc).

D8 These include but not limited to space utilization & occupancy costs, central computing services, electricity, telephone lines.

10. Report Submission Schedule

(Project period: 1/10/2010 - 30/9/2011)
My organization commits to submit proper reports in strict accordance with the following schedule:

Project Management		**Financial Management**	
Type of Report and covering period	**Report due day**	**Type of Report and covering period**	**Report due day**
Progress Report 1/10/2010 - 31/3/2011	30/4/2011	Interim Financial Report 1/10/2010 - 31/3/2011	30/4/2011
Final Report 1/10/2010 - 30/9/2011	31/12/2011	Final Financial Report 1/4/2011 - 30/9/2011	31/12/2011

11. Asset Usage Plan

Category	Item / Description	No. of Units	Total Cost	Proposed Plan for Deployment *(Note)*
audio and video equipment	DV camera & tripod	1	$5,000	Re-allocated to future projects conducted by my organization
computer hardware	Desktop computer	2	$12,000	Re-allocated to future projects conducted by my organization.

12. Evaluation Parameters and Method

Steering Committee

- A steering committee will be set up to oversee the implementation of the project. Committee meetings will be called regularly throughout the whole period of the project to ensure the effective and successful execution of the project.

External Reviewers

- External reviewers of education professionals will be invited to comment on the progress and implementation of the project.

Evaluative Research

- Evaluative research will be conducted to study the effectiveness of the project.
- Students' work will be assessed during the process and by the end of the project. These include students' in-process and project-end reflection reports, communication and collaboration artefacts. The purpose of the evaluation is to measure students' knowledge application abilities, higher-order thinking skills for problem solving.
- The project will be assessed from different angles. Key dimensions which will be studied include:
  - *Effectiveness of teacher training.*
  - *Learning outcomes of students, especially the acquisition of the subject-specific knowledge in the KLA of Personal, Social, and Humanities Education, as well as the enhancement of higher-order thinking skills.*
  - *Promotion of cultural exchange between students from Hong Kong and Beijing.*
  - *Establishment of learning partnership among schools in Hong Kong and Beijing.*
  - *Overall implementation of CIL by adopting LV.*

13. Sustainability of the Outcomes of the Project

During recent years, there has been a persuasive promotion of computer-supported CIL in education. In view of its educational value, many schools have attempted to implement computer-supported CIL in their teaching practice even though teachers have yet to gain much experience in facilitating this approach. With the adoption of LV, this project will equip the participating teachers with knowledge and skills for facilitating students to pursue computer-supported CIL try to assist the participating schools in implementing computer-supported. Besides, through the introduction of gaming elements, it is believed that the participating students' learning motive in participating computer-supported CIL will be enhanced. Apart from that, other local, global Chinese and international parties in the education sector can also learn the experience gained in this project through attending the dissemination seminars, conferences, and by reading the project reports, newsletters and journals.

The promotion of LV is a long-term plan of CAITE. The schools involved in the project will become the pilot schools of this plan. The schools with good practices will be selected as model schools, and invited to share their experiences in various occasions, such as seminars, training workshops and conferences even after the end of the project. Through these opportunities, the good practices and the experience of the project will be shared among other interested schools. After the project ends, the schools involved can go on to use LV with minimal cost for server and system maintenance.

14. Dissemination / Promotion

A dissemination seminar will be organized in Hong Kong in the final stage of the project to disseminate the valuable outcomes and experience of the project, especially the good practices of the participating schools. Scholars and representatives from Beijing will be invited to share their experience with Hong Kong participants. The project report will be distributed to primary schools and educational organizations and bodies in Hong Kong and Beijing. The findings of the project's evaluative study will be presented in local, global Chinese, as well as international conferences of IT in education. Besides, the findings will also be published in local, global Chinese, and international journals.

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Appendix

香港－北京學校配對工作

1. 來自香港學校的班級與來自北京學校的班級組成配對班級
2. 每班學生分為 9 個協作組，每組約 3-4 人
3. 每班級共有 3 個專題需要研習，每 3 個組選擇 1 個專題研習
4. 以一組香港同學和一組北京同學進行配對，組成一跨校協作隊，通過網絡在“學習村莊”共同合作研習
5. 每隊就不同的專題研習主題在「學習村莊」中進行跨地討論，並完成專題研習任務
6. 每隊成員需共同製作、遞交一份研習成品，如 PPT、概念圖、模型或錄像

專題研習主題

1. 全球變暖的原因
2. 如何解決水資源缺乏
3. 如何解決交通擠塞
4. 誠信的重要性
5. 互聯網的利與弊
6. 智慧型機器人對未來人類社會的影響
7. 上海世博會對中國未來社會發展的影響