

II Project Information

Project Title (in English) DEVELOPMENT OF A BLENDED LEARNING MODEL FOR IMPROVING TEACHING EFFECTIVENESS IN SUB-DEGREE ACCOUNTING COURSES	Project Title (in Chinese) 增進會計學副學位課程的成效：混合式學習模式的開發
A. Project Summary	
<p>Blended learning emphasises the right mix of e-learning and traditional classroom learning. Owing to the differentiated learning needs of different subject disciplines, there is no universal "right mix" for all courses. It has been reported in the literature for many years that blended learning would produce promising results in various subject disciplines. However, in practice, blended learning is not so popular in community colleges, especially in accounting courses. An effective blended learning model for sub-degree accounting courses has not yet been found. The purpose of this project is to develop such a blended learning model, where the teaching and learning effectiveness can be maximally enhanced through an optimal mix of e-learning and traditional classroom learning.</p> <p>Accounting is a major discipline in post-secondary education and professional training in Hong Kong. Sub-degree accounting courses usually span a wide range of topics that aim to help students understand the technical material and help them apply the learned knowledge for decision making. In the traditional classroom setting where an instructor-led approach is followed, and given a limited number of contact hours, in-class discussion and peer-to-peer sharing can hardly be facilitated. Therefore, the following learning needs have been identified: (a) more space and channels to provide learning resources and activities for students, (b) a self-paced learning environment, and (c) an open environment to promote discussion, interaction, and collaboration. These follow the belief that blended learning can pave the way for an open, flexible, interactive learning environment for students.</p> <p>Having pinpointed the unique learning needs in sub-degree accounting courses, this project will cover four core components: (a) designing and developing online and in-class activities with a view to providing open space for teachers to facilitate discussion and sharing between teachers and students, and among students (b) constructing a blended learning platform, where self-paced learning units will be offered to enhance learning through both student-student and student-teacher interactions (c) measuring and evaluating the effectiveness of the developed blended learning model, where students' outcomes will be evaluated, students' learning experiences will be measured, and the benefits, impacts, and difficulties encountered — for teachers and students — will be analysed (d) continuously improving and refining the blended learning model — to be carried out in the course of implementation.</p>	

In the past decade, the number of sub-degree students has increased rapidly but most existing blended learning practices focus on degree or higher degree courses. For enhancing teaching and learning effectiveness, developing an effective blended learning model for sub-degree courses is essential. This project would significantly contribute to the advancement of post-secondary teaching and learning by serving as an exemplar of effective blended learning practices for accounting sub-degree courses.

B. Project Objectives

(please identify the needs of the target recipients and explain how the project aims to address the needs).

B.1. Background Information

The recent diffusion of the Internet and proliferation of computers means that post-secondary students are well accustomed to using computers in their learning activities. To capitalize on this trend, many higher education institutions are eager to incorporate IT components into their traditional teaching environment. These components are mainly computer-mediated learning materials, online quizzes, or other online learning tools. On one hand, some comparative research has reported that simply introducing computer components into traditional face-to-face courses does not necessarily improve the learning outcomes for business courses.^{1 2} On the other hand, the benefits of blended learning and e-learning to enhance teaching and learning have become widely recognised.^{3 4} Recent research reported that students have demonstrated **positive perceptions towards blended learning** in the social sciences,⁵ accounting,^{6 7} engineering,⁸ mathematics⁹ and information technology¹⁰ disciplines. The common element in these practices is a student-centred pedagogy, in which **blended learning** would allow students autonomy in self-paced learning, increase the level of active learning strategies, and enhance peer-assisted learning.¹¹

By literal definition, blended learning is an appropriate mix of e-learning and traditional classroom learning that improves the students' learning experience. It is certain that **one single model of blended learning does not fit all situations**; therefore different pedagogical approaches and educational technologies are required to support **effective** blended learning. Factors such as “backgrounds and experience of the concerned students, the interactions and group dynamic among them, the delivery and conception of the teachers, the interaction between the teacher and the students...”¹² will affect student participation in the blended learning environment, resulting in different learning outcomes. This project is to develop an **effective blended learning model** to support **sub-degree accounting courses**.

B.2. Current Issues and Needs

Our deliberations led us to choose **accounting courses** for this project. The courses span a wide range of topics including accounting principles and practices for professional development, which aim to help students understand the technical materials through intensive drilling exercises and to enhance student capabilities in applying the learned knowledge in analysis and decision making. More recently, with changes of professional requirements and expectations in the business world, topics which are more broad-based in nature — for example, China Business and Accounting, Corporate Governance and Business Ethics — have been added. These new topics emphasise active experience-sharing among students as well as proactive interactions with knowledge outside the classroom. In the traditional classroom setting, students learn from the **instructor-led approach**. Most of the contact hours are used explaining concepts and solving problems, while very little time can be spent on discussions, peer assessments, and the skills of critical thinking and evaluation to help students immerse into the different aspects of the teaching topics.¹³

Most existing blended learning practices focus on undergraduate degree or higher levels. **Limited studies have been done at the sub-degree level**. Thus, what are the suitable online learning components and activities that fit students' needs at sub-degree level; how can these components and activities be integrated into the traditional face-to-face teaching environment; and, more importantly, what is the right mix of online education and face-to-face instruction that brings with it the most desirable modes of interaction¹⁴ are critical areas for study. It is therefore worthwhile exploring **an effective blended learning model** to achieve optimal teaching and learning effectiveness for **sub-degree courses**.

With the primary focus on accounting courses at the sub-degree level, we identified at least the following **teaching and learning needs** :

- (a) More **space** and **channels** to provide learning resources and activities to help students to:
 - Develop logical and analytical skills to tackle complicated business scenarios,
 - Explore more and understand the practical business environment and operation,
 - Learn how to apply the concepts and theories they have learned in different business situations.
- (b) An **open environment** to promote discussion, interaction and collaboration where students are motivated and assisted in understanding the topics by peers, so that:
 - Students can exchange views and learn from each other.
 - Students can learn collaboratively through experiences shared by others.
- (c) A **self-paced learning** environment for students with diverse learning styles:
 - Students can study and review the teaching materials at their own pace and time.
 - Students can be motivated by suitable learning styles to develop responsibility for their own learning.

B.3 Target Recipients

The target recipients of this project are **those sub-degree students studying accounting courses and teachers of the sub-degree accounting courses.*** A number of courses from the current sub-degree accounting curriculum[†] will be selected for this project. Examples of these accounting courses are Financial Accounting, Cost Accounting, Transaction Accounting, Managing Finance, Principles of Accounting, Auditing Practice and Procedure, Taxation, Management Accounting, and Business Information Systems.

B.4 Project Aims

By pinpointing the unique teaching and learning needs of accounting courses at sub-degree level, this project aims to develop an effective **blended learning model for sub-degree students studying accounting courses.** It also helps increase the IT awareness among students to prepare them for the new era of learning, and to promote self-learning.

The project comprises the following four core components :

(a) Design and development of online and in-class activities

- Pre-class and post-class online learning activities can serve as self-paced learning units to help students acquire the basic knowledge in a more effective way.
- Pre-class and post-class online learning activities allow students to participate in interactive exercises in class time.
- A mixture of online and in-class activities can provide open space during class for teachers to facilitate discussion and sharing between teachers and students, and among students.

* For the number of potential beneficiaries, please see Section C (Outcomes and Deliverables of the Project) Para 1.

† Current accounting courses in the Higher Diploma in Business (Accounting) in HKU SPACE include :

- Year 1 : Transaction Accounting, Office Practice and Procedure, Financial Accounting 1, Cost Accounting 1.
- Year 2 : Financial Accounting 2, Cost Accounting 2, Managing Finances, Managing People, Auditing Practice and Procedure, Taxation.
- Year 3 : Principles of Accounting, Principles of Economics, Legal Framework of Business, Organisation and Management, Management Accounting, Business Information System, Introduction to Marketing.

For further details, please refer to the course information from the HKU SPACE website at www.hkuspace.hku.hk.

(b) Construction of a blended learning platform

- Blended learning can be enabled with the help of technology. For instance, multimedia presentations on drilling exercises, simulations/video recordings of accounting tool applications, and interactive exercises or quizzes. All these self-paced learning units allow students to study at their own pace and time. Student-content interaction can be enhanced.
- With online forums, students can ask questions and share their ideas with teachers and outside accounting professionals from relevant industries, and classmates who can discuss these ideas and proactively contribute to new knowledge. This not only fosters interactions between teachers, students and amongst students as well as outside industry professionals beyond the classroom, but students can co-learn together by knowledge sharing, peer-to-peer learning, and learn from environments outside the classroom.
- Teachers will be provided with information of learning activities and performance of students through a tracking system. This information will be useful for teachers to adjust the teaching pace and learning topics to respond effectively to the students' needs.

(c) Measurement and evaluation

- Quantitative data on student outcomes such as student assessment results, students' learning experience in terms of their learning interests, learning confidence, self-learning skills, and communication skills will be collected and analysed.
- A participation index will be measured to evaluate the teaching and learning effectiveness by the level of student participation.
- Qualitative aspects will be collected through interviews or focus group meetings with teachers and students to probe into the deeper understanding of teaching and learning experience such as impacts on teachers and students, difficulties encountered, and benefits gained. In addition, on-going content analysis of journal writings from students and teachers will be performed.

(d) Improvement and refinement

- Based on the qualitative and quantitative evaluation results, the above three processes will be repeated to improve the online and in-class activities, to refine the blended learning platform, and to re-evaluate the effects of the improvements applied.
- This iterative improvement process will facilitate continuous refinement of the blended learning model with regular and constant feedback from students and teachers.

C. Outcomes and Deliverables of Project

The project will begin with a group of sub-degree students studying accounting courses, followed by other selected groups of students in HKU SPACE Community College. Around 500 sub-degree students studying accounting courses in HKU SPACE will benefit from this project. Upon positive results, it could be extended to other accounting courses of HKU SPACE and those in other institutions. At that time, the potential beneficiaries would constitute around 13,600 students (or 1,126 Full-Time-Equivalent students) for other accounting courses in HKU SPACE, and roughly 2,600 accounting students in other institutions. The outcome of this project is a **blended learning model** that can serve as an exemplar of blended learning for sub-degree accounting courses in other institutions.

The deliverables of this project are:

- A set of complementary online activities and tools for sub-degree accounting courses
- An online learning platform that supports all online activities and e-content developed for accounting students and teachers to use
- Evaluation reports on the learning performance of students studying using the blended learning model versus traditional classroom lecturing
- Evaluation reports on the learning experience of students studying using the blended learning model versus traditional classroom lecturing
- Reports on interviews with students and teachers regarding the impacts of blended learning on them, difficulties encountered, and benefits gained
- Publication of the project's results
- Seminars on the project's findings to educational and professional bodies for their feedback and comment

Potential beneficiaries will benefit from the project in the following ways:

- Students will be provided with an open learning environment in which they are more connected to the class and learning community.
- Students will be provided with a ubiquitous learning environment in which flexibility and autonomy have been enhanced.
- Students will be provided with an interactive environment which facilitates collaboration among themselves and outside industry professionals. Within this learning culture, students will learn in a more effective and constructive way. It will help students to develop their reasoning and critical thinking.
- Students and teachers will be provided with an interactive environment to promote mutual communications.
- Students and teachers will be provided with a more effective means to facilitate the process of learning and teaching.
- Teachers will be provided with information on learning activity and student performance. This information will be useful for teachers to adjust teaching pace and learning topics in order to respond effectively to the needs of students.

D. Implementation Details

The project will be implemented in two phases.

(a) Phase I : Set up the interactive activities and online learning environment

- Select the pilot group[‡]
- Programme teams and teachers to devise the teaching plan of the pilot group to include appropriate interactive activities
- Implement the online learning environment
- Provide training sessions to relevant teachers

(b) Phase II : Evaluate the effectiveness of the blended learning model, enhance the blended learning model and system, identify areas for further improvement and consolidate the blended learning model

- Provide a blended learning environment to the pilot group to conduct pre-class, in-class and post-class activities
- Regular monitoring of learning progress of students of the pilot group
- Analyse student outcomes and learning experience of the pilot group (such as their learning interests, learning confidence, self-learning skills, and communication skills) before and after launching the blended learning environment
- Content analysis of journals from students and teachers of the pilot group
- Collect feedback from students and teachers of the pilot group via surveys and/or interviews
- Evaluate the teaching and learning effectiveness based on the analysis results and feedback collected
- Enhance the blended learning model and revise the interactive and extended learning environment based on the evaluation results to cater for the needs of students and teachers
- Identify areas for improvement for further development
- Consolidate the blended learning model in terms of the suitable learning activities, methodologies, assessment, evaluation, and best practices to be employed.

E. Implementation Schedule *(Please extend this table if necessary.)*

Estimated start date of project: **August 2009**

Estimated completion date of the project: **July 2011**

[‡] The pilot groups will be formed on a voluntary-basis.

<p>The whole project will take two years to complete. The following table outlines the actions and tasks, timeframes, and cash flow requirements in the 1st and 2nd years of the implementation.</p>			
Action		Time Frame	Cash Flow Requirement
1st six-months			
a.	Select the pilot groups and the target courses	Aug 2009	HK\$397,900
b.	Prepare the learning materials (1 st batch) <ul style="list-style-type: none"> • Devise the teaching plan for the pilot group • Design the interactive content • Implement the interactive content • Review the interactive content by teachers • Finalise the interactive content • Approve the interactive content 	Aug 2009 to Jan 2010	
c.	Set up the online environment <ul style="list-style-type: none"> • User requirement collection • Feasibility studies • Systems setup 	Aug 2009 to Jan 2010	
2nd six-months			
a.	Prepare the learning materials (2 nd batch) <ul style="list-style-type: none"> • Design the interactive content • Implement the interactive content • Review the interactive content by teachers • Finalise the interactive content • Approve the interactive content 	Feb to May 2010	HK\$349,900
b.	Set up the online environment <ul style="list-style-type: none"> • Systems setup • Data integration (Student records and enrolments) • Integrate the interactive content into the online environment 	Feb to Jul 2010	

3rd six-months		
a.	Provide training sessions for teachers	Aug 2010
b.	Launch the online environment	Sep 2010
c.	Conduct the pre-test survey for pilot group	Sep 2010
d.	Provide pre-class activities for pilot group	Sep 2010 to Jan 2011
e.	Facilitate in-class and post-class activities for pilot group	Sep 2010 to Jan 2011
f.	Collect student outcomes and learning experience <ul style="list-style-type: none"> • Questionnaire setup and interview preparation • Conduct surveys and/or interview • Analyse students' journal writings 	Nov to Dec 2010
g.	Collect teachers' perceptions <ul style="list-style-type: none"> • Questionnaire setup and interview preparation • Conduct surveys and/or interview • Analyse teachers' journal writings 	Nov to Dec 2010
		HK\$333,600
4th six-months		
a.	Provide pre-class activities for pilot group	Feb to Apr 2011
b.	Facilitate in-class and post-class activities for pilot group	Feb to Apr 2011
c.	Collect student outcomes and learning experience <ul style="list-style-type: none"> • Questionnaire setup and interview preparation • Conduct surveys and/or interview • Analyse students' journal writings 	Mar to Apr 2011
d.	Collect teachers' perceptions <ul style="list-style-type: none"> • Questionnaire setup and interview preparation • Conduct surveys and/or interviews • Analyse teachers' journal writings 	Mar to Apr 2011
e.	Evaluate the teaching and learning effectiveness	Jun to Jul 2011
f.	Define refinement items for the online environment and interactive content	Jul 2011
g.	Consolidate the blended learning model	Jul 2011
		HK\$333,600

F. Project Budget			
The following table shows the cost breakdown (by manpower, equipment and facilities, services, general expenses and others) for the 1 st and 2 nd years.			
Projected Expenditure <i>(Please provide detailed breakdown under each item)</i>	Amount in HK\$		
	Year 1	Year 2	Total
Manpower			
▪ 1 System Developer (see Note 1)	290,160	290,160	
▪ 1 Project Officer (see Note 2)	193,440	193,440	
			967,200
Equipment / Facilities			
▪ 2 notebook PCs (for system development and demo)	24,000		
▪ Special software tools and accessories	24,000		
			48,000
Services			
▪ Design and preparation of pre-class and post-class learning materials	100,000	50,000	
▪ Video/ Audio content production	20,000	10,000	
▪ Interactive learning materials production	20,000	10,000	
▪ System support and maintenance services	10,000	10,000	
			230,000
Others			
▪ Content copyright / licenses	10,000	10,000	
▪ Costs of organizing workshops (for learning reinforcement) / sharing sessions for students	20,000	15,000	
▪ Costs of organizing seminars / conferences		40,000	
▪ Auditor's fees		2,400	
▪ Miscellaneous	2,500	2,500	
			102,400
Contingency (5% of total project costs)			67,400
Total Expenditure			1,415,000
Sources of Funding			
Amount of grant sought under this application: <u> 1,415,000 </u>			
Other sources of funding: <u> 0 </u>			

Notes

(1) The system developer will provide online learning environment development and support.

Duties include :

- setting up and customising the online learning environment;
- providing on-going enhancement of the online learning environment to suit the learning needs refined in the project phases;
- providing on-going technical support;
- setting-up user accounts and providing account maintenance;
- providing security control, backup, and recovery of the online system; and generating learning progress and monitoring reports.

(2) The Project Officer will provide project coordination and administrative support.

Duties include :

- assisting the project manager to manage and coordinate the project;
- working closely with the programme staff, teachers, and technical staff to coordinate the pre-class, in-class and after-class teaching support;
- measuring project outcomes by conducting the Learning Experience Survey, analysing the student outcomes and journal writings, measuring the participation index, and
- coordinating teacher and student interviews; and
- conducting training to teach the teachers and students to use the online learning environment effectively.

G. Monitoring and Self-evaluation Mechanism

Monitoring of the Project

The project will be steered by a project committee comprising the key personnel, members, and consultants of this project. Regular progress checking and monitoring will be performed to ensure the project will be implemented within budget and will be delivered on time. Progress reports will be prepared.

Evaluation Mechanism

Formative evaluation will be performed regularly (roughly every three months) throughout the implementation phases: (a) to monitor the progress of the project, and (b) to collect feedback continuously from the target recipients and the project members.

Feedback collected will be used to validate and ensure that the aims of the project are being achieved. In each evaluation process, identification of issues and subsequent revision or remediation of necessary aspects will be carried out to fit fine-tuned project details into the whole implementation.

Formative evaluation will be performed in the process of designing online and in-class activities, designing and implementing interactive content, and developing the online learning platform. To carry out formative evaluation, the following evaluation methodologies will be used:

- Monitoring the project closely and preparing regular progress reports.
- Collecting and evaluating teachers' feedback via regular evaluation meetings
- Analysing students' online participation via online progress tracking
- Analysing students' and teachers' journal writings
- Collecting and analysing students' feedback via the learning experience survey and focus group interviews

Summative evaluation will be performed at the closing stage of the implementation phases. The following indicators will be used to measure the effectiveness of the project:

- Measuring outcomes related to the students' learning experience, such as on their learning interests, learning confidence, self-learning skills, and communication skills.
- Measuring the participation index to evaluate the teaching and learning effectiveness by the level of student participation.

Seminars will be held to inform educational bodies and professional communities of the project results. Feedback and comments from the invited parties will be collected for evaluation.

H. Management Support and Key Personnel Involved

The project is fully supported by the management of HKU SPACE. The School will allocate manpower to the project apart from staff requested in the budget.

(a) Principal investigators

- Dr. Simon Cheung, Director of IT Services and Associate Head of Centre for Cyber Learning[§]
- Mr. Albert Hung, Associate Head of College of Business and Finance^{**}
- Dr. Zhang Weiyan, Head and Chief Researcher, Centre for Research in Continuing Education and Lifelong Learning^{††}

(b) Project team members

- Dr. F.T. Chan, College Vice Principal (Academic Affairs) of Community College and Head of Centre for International Degree Programmes
- Dr. Joseph Yau, Senior Programme Director, College of Business and Finance
- Miss Kimmy Yuen, Programme Manager, College of Business and Finance
- Ms. Iris Kwok, College Senior Lecturer, College of Business and Finance
- Ms. Rainey Choi, College Lecturer, College of Business and Finance
- Mr. Leo Ng, College Lecturer, College of Business and Finance
- Mr. Samson Pang, College Lecturer, College of Business and Finance
- Ms. Tanny Wong, College Lecturer, College of Business and Finance
- Ms. Katie Wong, College Lecturer, College of Business and Finance
- Ms. Jeanne Lam, IT Manager, Centre for Cyber Learning
- Ms. Norris Lau, IT Officer, Centre for Cyber Learning
- Ms. Janny Ng, IT Officer, Centre for Cyber Learning
- Project Officer (to be recruited)
- System Development Officer (to be recruited)

(c) Project Advisors

- Prof. T.M. Wong, Deputy Director, Head of College of Life Sciences and Technology and Head of Centre for Cyber Learning
- Dr. Jane Lee, Deputy Director and Head of College of Business and Finance

[§] Dr. Cheung possesses extensive experience in University IT services for teaching and learning and administration. He is conversant with the latest e-learning technologies and successfully developed several e-learning projects. His successful experience in e-learning development was reported in the literature and international conferences on e-learning. He currently serves in the organising committee and programme committee of a number of international conferences on e-learning, and IT in teaching and learning.

^{**} Mr. Hung possesses extensive experience in teaching and academic programme management. He currently leads a number of accounting and management programmes in HKU SPACE and HKU SPACE Community College, including professional accounting examination courses such as for ACCA, CIMA and HKAAT, full-time accounting sub-degree courses, and overseas top-up degree courses. He also manages the MBA programme of London University.

^{††} Dr Zhang possesses extensive teaching and research experience in mainland China, Hong Kong, Canada, and the UK. His research expertise is in the areas of continuing education and lifelong learning, online teaching and learning, teacher education, and careers guidance. He has successfully led many research projects in online teaching and learning. He currently serves in the editorial board and advisory board of a number of international journals in continuing education, open education and education technologies.

I. Special Justifications if the Grant Sought Exceeds \$2 million

N/A

III Other information

1 Project Sustainability *(If applicable, please describe how the recurrent expenditure involved will be met after completion of the proposed project)*

The blending learning platform will be maintained and supported by the Information Technology Services Unit and the Centre for Cyber-learning of HKU SPACE after the completion of this project. This project will be sustained by its nature. The developed blended learning model will be continuously fine-tuned to cope with the changing teaching and learning needs. With the results and experience gained in this project, an exemplar of blended learning comprising essential elements can be applied to other sub-degree business courses based on the content nature, learning objectives, and students' needs.

2 Preparatory work done *(If any)*

Our School started to practise e-learning in 2000. We used to conduct evaluative surveys on a yearly basis to obtain teachers' and students' views on the needs and benefits of e-learning. Some recent surveys showed that full-time sub-degree students of our School generally found e-learning useful and could gain benefits through e-learning.^{15 16 17} Over 50% of the respondents agreed that they were encouraged to seek additional resources and reference materials online, and that e-learning helped them outside the classroom. In another survey on the demand for continuing education, over 80% of the potential online learners expressed their preference for a blended learning mode – the combination of e-learning and face-to-face learning.¹⁸ We conducted interviews with teachers and students on their views on e-learning. Opinions were collected, and problems and needs were identified. These motivated us to develop an effective blended learning model for sub-degree accounting courses.

3 Past experience in organizing projects of similar or relevant nature and achievements *(If any)*

Our School has committed to e-learning for quality learning and teaching. A dedicated team is devoted to e-learning development and support, and the team was recently reformed as a Centre for Cyber Learning. As early as 1999, we developed our first Learning Management System, called SOUL system.¹⁹ Since its production in 2000, the SOUL system has provided an e-learning platform for teachers and students to disseminate information and course materials. We also developed a learner's portal for our students to receive news and information as well as to access support services.²⁰

Based on our experience, we formulated a generic functional framework of an e-learning environment and derived some principles for good practices of e-learning in continuing education institutions.^{21 22} In the previous two years, we had conducted a pilot project to investigate a pedagogy-driven approach to developing e-courses, with a strong focus on the innovative use of information technologies in instructional and content design. The project achieved significant results.^{23 24 25} We have also shared our experience in e-course development at international conferences and workshops, and were honoured by an award on applying information technologies in teaching and learning.^{26 27} Our successful past experience should provide a good reference for this project.

This project is concerned with the advancement of blended learning practices for enhancing teaching and learning effectiveness. For such a project pertaining to the application of IT in teaching and learning, strong collaboration between both IT and academic staff is critically important. The full support from senior management, the project team's expertise in IT in teaching and learning, and a track record of successful past experiences in related projects are also critical success factors. We possess all these attributes, and are confident of managing this project well to ensure successful delivery of the committed outcomes.

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