



Completion Report

Project Supported by LTC/OBA Funding*

(Period covered: 1 Sep 2011 - 31 Dec 2012)

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- 4 MAR 2014
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Part I: General Information

Funding Source (please tick ✓ as appropriate): LTC OBA Funding

Project Code: 3.61.89D9 Host Department: Computing

Project Title: Pilot project for conducting institutional and programme learning outcome assessment with an electronic system

Project Team:

Project Leader (Name & Dept):	Team Member(s) (Name & Dept):
Vincent NG (COMP)	Kam Por KWAN (VPAD) Edward LO (EE) Esmond MOK (LSGI) Jianrong SUN (EDC) Winnie WONG (ITS) Bo WU (LSGI)

Part II: Project Details

1. Financial Information

(a) Overview

Approved Funding: HK\$ 1,138,000 + Additional Funding Received (if any): HK\$0 = Total Funding Received: HK\$1,138,000

Source of Additional Funding: HK\$ 0

(b) Project Expenditure

Expenditure	Original Budget Approved	Revised Budget ¹ (if applicable)	Actual Expenditure	Balance
Salary (Please indicate rank, number of staff members & salaries)	908,000.00	328,000.00	302,886.97	25,113.03
Equipment	80,000.00	0.00	0.00	0.00
General Expenses	50,000.00	200,000.00	192,660.00	7,340.00
Others	100,000.00	610,000.00	610,000.00	0.00
Total	1,138,000.00	1,138,000.00	1,105,546.97	32,453.03

¹ Please give reasons for the revised budget and quote the relevant authority's approval reference where appropriate.

2. Project Schedule

Dates as Stated in Original Proposal: Start date (dd/mm/yyyy): 01/06/2011 Completion date (dd/mm/yyyy): 31/08/2013

Actual Start and Completion Dates: Start date (dd/mm/yyyy): 01/09/2011 Completion date (dd/mm/yyyy): 31/12/2012

Project Period Extension(s) (if any): Total no. of extension(s) obtained: 0 time(s) Obtained during the project period: For a total of 0 month(s)

Reason(s) for Extension(s) (if any):

* LTC: Learning and Teaching Committee

OBA Funding: Funding for Promoting Outcome-Based Approaches to Student Learning

3. Project Implementation

(a) Project objectives

- To explore the use of an electronic system to support and facilitate the administration of institutional (ILOA) and programme (PLOA) learning outcome assessment in PolyU by:
 - Partnering with selected departments to formalize their PLOAP and model the process in an electronic system to facilitate their work.
 - Modelling within the BbOS the “Outcomes Hierarchy”, consisting of organizational hierarchy, programme and subject structure, outcome statements, curriculum mapping and alignment, as well as assessment rubrics for the departments to be piloted.
 - Constructing and implementing data collection mechanisms within BbOS to extract data throughout students’ years of study in accordance to the needs of ILOA and PLOA.
 - Exploring analysis and reporting methodologies and constructing electronic templates of outcome assessment reports using the facilities available within BbOS for -LOA and PLOA.
 - Evaluating the long term feasibility, effectiveness and resource implication of using BbOS to facilitate ILOA and PLOA.

(b) Overview of specific work undertaken for achieving the project objectives (including any changes to original proposal)

- Pilot testing of Blackboard Outcome System (BbOS)
 - Developed a testing environment to explore the functionality and features of Blackboard LMS/ Blackboard Outcome module (version SP6 and further upgraded to SP8)
 - Used the PLOAPs from selected departments (COMP and LSGI) to evaluate the suitability of the Blackboard LMS/ Blackboard Outcome module according to the PolyU context for ILOA and PLOA -- concluded that BbOS may not be fully utilized due to some limitations.
- Identified the scope of the project and proposed 2-tier approach by:
 - 1) Developing a reporting tool based on a BI (business intelligence) platform, i.e. the development of OOBARS in the later stage
 - 2) Developing a data reporting process and software tools to support the OBA reporting for subject lecturers and programme leaders, i.e. the OBADRM in the later stage.
- Development of the data capturing process based on the BB Learn module – “Outcome Based Assessment Data Recording Module (OBADRM)”
 - Such process aimed to support the reporting of the OBA assessment results by subject lecturers.
 - Subject lecturers can use the BB Learn module to define and enter the corresponding programme learning outcomes for the teaching subject. New columns can be defined in the Grade Center according to the curriculum map of PLOAP and allow lecturers to enter the assessment results during or after the semester.
 - When the OBA results are stored in the Grade Center, they can be exported as MS Excel files. The OOBARS application (described in point 3.) can aggregate summary information from different subjects to form the outcomes of the corresponding programme.
 - Lecturers from selected departments (COMP and LSGI) were invited to participate in the pilot testing in December 2012. They were asked to assess each of their students’ learning outcomes by filling in “Y(achieved) / N(not achieved)” in the generated column(s) in the Grade Center. 4 subjects (COMP311, COMP452, LSGI2372, LSGI3343) were involved in the pilot testing.
- Development of the OBA reporting application system - “Online Outcome Based Assessment Reporting System (OOBARS)”
 - The system would be external to BB. It has 3 major components: PLO information, OBA data capturing and processing and OBA reporting.
 - For the OBA reporting component, it can allow a group of users to generate reports (in pdf format) relating to the learning outcomes. Testing of reporting function was completed in Jan 2013.

- Compatibility testing of the Business Intelligence tool "InfoView" of the AS Department.
 - Users can export students' subject results in .csv format, and the data file can be imported in OOBARS for report generation successfully.
- A user manual for the three systems above been completed for potential users. (Please refer to Appendix 1)

(c) Difficulties encountered, if any, which have affected progress, and remedial actions taken

There are 5 major changes in the project.

1. The project was originally proposed by EDC/PolyU and got funded by LTC/PolyU. However, the PI in EDC had left PolyU in late 2011 and Dr. Vincent Ng from COMP has been recommended to take the project over in early 2012. When the project being handed-over to COMP, only some minor review work had been done.
2. Since the handover to COMP, the OBE project plan has been revised and progressed steadily. Initial review has been completed with recommendation that Blackboard could not be our main development platform and have decided to do an independent development with 2 components. One component is to interface with the GradeBook of the Blackboard Learn Module and the second component is online management system for the PLOAP. On the other hand, the project team has been informed that the deadline of the project cannot be extended beyond 2012. Therefore the actual development period has been shortened.
3. Pilot testing of Blackboard Outcome System (BbOS)
 - The BbOS is still in the pilot stage which is not yet fully implemented.
 - After some exploration of compatibility, the BbOS may not be fully utilized due to some limitations.
 - More time is needed to explore other options as well as the long term feasibility of BbOS after full implementation.
 - A new system design was proposed.
4. Project virement to speed up the development of the new system design
 - In order to speed up the development as well as to leverage the expertise of BeeNET (the vendor of BB) and ITS, after some discussions among team members, it is agreed to outsource the system development to the 2 parties and the project team will take care of the requirement collection, project coordination and software quality assurance works. The development works of the Outcomes Bb module and Online Outcome Based Assessment Reporting System would be outsourced to BeeNET and ITS, respectively.
 - The balances of different account items to the items 'Contract Services' and 'General Expenses' were transferred to cover the cost of outsourced developments.
 - The application of virement was approved in October 2012.
5. After the testing of the new system, it is found that the extra effort has to be made for the subjects which assess mainly on students' academic results.
 - After some exploration of compatibility, some functions in the eAcademic system can be utilized. Students' subject grades can be exported by the Business Intelligence (BI) Tools of the AS Department in .csv format and such data can be incorporated in the OOBARS.

(d) Deliverables/useful findings/good practices emerged

- Sets of OBA data have been collected from LSGI and COMP. They have been carefully reviewed and tested in the systems.
- The project team has reviewed the feasibility to utilise the students' subject results extracted by the BI tools provided by the AS to facilitate the administration of PLOA.
- We completed the prototype and pilot testing of a hybrid reporting application which can utilize the BB Learn module.
 - An OBA reporting system external to Blackboard (OOBARS)
 - An OBA assessment result reporting process which can exploit the support from the BB Learn module (OBADRM)
 - Assessment results in the eAcademic system can also be supported in OOBARS.
- User guides have been prepared for potential users.

(e) Dissemination activities taken/planned to sustain impact

When completed, a prototype for an electronic institutional and programme learning outcome assessment system will

be developed that:

- provides a suggested set of feature requirements of an electronic system to support ILOA and PLOA.
- provides the design of a computerized model of "Outcomes Hierarchy" consisting of hierarchical structure, academic programme, subjects, outcome statements, assessment rubrics, curriculum maps and alignments, as well as outcome assessment plans
- facilitates the data collection mechanisms of BbOS to aggregate data throughout students' years of study from the learning management system and other external data sources
- enables the development of report templates to fit the PolyU context for ILOA and PLOA and explore the use of different analysis and assessment methodologies, including the use of weighted aggregation of outcome results and longitudinal tracking of student performance over the entire study period.

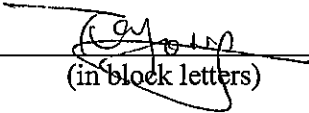
It is planned to organize a seminar introducing the project and OOBARS to stakeholders in PolyU in late 2013. Academic team members who have participated in the pilots will also be invited to share experience and best practices.

(f) Self-evaluation or additional information/remarks

Evaluation of the outcomes and deliverables has been implemented in (1) system tests being run by the development team and (2) results of two pilot tests.

- (1) After the completion of prototype, a series of tests have been conducted successfully. The list of functional requirements in the specification has been met.
- (2) Two pilot tests have been conducted in order to test the two ways of data capturing and report generation.
 - Pilot testing of the system using programme learning outcomes assessment (PLOA) of COMP has been completed. Within the OOBARS, users can upload the PLOAP, manage the PLOAP and alignment with ILO, view the student assessment data captured from the Blackboard Grade Center to OOBARS via API program and generate PLOA reports which can fulfill the reporting needs of the Department. A sample report as shown in Appendix 2 has been generated from the pilot in COMP.
 - From the suggestions from the current LSGI PLOAP process, some PLOAPs would be worked out mainly on students' academic results, and the use of the Blackboard Grade Center is not necessary. Hence, a pilot test of data capturing through the eAcademic system has been performed. Results show that students' subject grades can be exported by the Business Intelligence (BI) Tools of the AS Department in .csv format and such data can be incorporated in the OOBARS. PLOA reports can also be generated successfully to meet the PLOA reporting requirement of other departments. The goals of the pilot testing have been fulfilled.

Name of Project Leader: _____


(in block letters)

Date: 19/9/2013 _____

(a) Rating and comments/recommendations on the following areas of the project

(please put a ✓ in 1 of the following 2 ratings and provide comments)

Areas	Rating		Comments and Recommendations
	Satisfactory	Needing attention	
Overall financial management/ use of funding	✓		Nil.
Overall project progress	✓		Nil.
Outputs /deliverables / dissemination	✓		Is the outcome module the same as the outcomes hierarchy in the objective? Is the data capturing process the construction and implementation of the data collection mechanisms mentioned in the objective?
Overall rating / comments on the project (Please suggest remedial actions if the rating is 'Needing attention')	✓		Nil.

(b) Issues requiring the attention of FLTC/Dean of School and/or the funding authority

Nil.

(c) Outputs/deliverables/good practices of the project that can be shared with other subjects, programmes or departments within the Faculty, or with the wider PolyU community

Share the programs and tools by running a larger scale pilot study.

(d) Additional comments/remarks

Not sure what is the implication of the pilot study to the long term evaluation mentioned in the objective.

Name of D/SLTC Chair

(or HoD/Dean of School):

Dr Korris Chung

(in block letters)

Date:

21 Feb 2014

[^] To be prepared by HoD/Dean of School if the PL is also the D/SLTC Chair, or if the Centre/Unit/Office does not have a DLTC.

Part IV: Evaluation by FLTC/Dean of School:

(a) Overall rating on the project (please put a ✓ in 1 of the following 2 ratings):

- Satisfactory
- Needing attention

(b) Overall comments and recommendations on the project:

✓

(c) Issues requiring the attention of the funding authority:

NIC

Name of FLTC Chair/
Dean of School: Kenneth Lam Date: 13 March 2014
(in block letters)

The Dean of School or HoD of the Centre/Unit/Office needs not fill this part if he/she has already commented in Part III.

Part V: Response & Follow-up Plan by Project Leader

(Response and follow-up plan is required from the Project Leader if there is any area rated as 'needing attention' in Part III and/or IV.)

Name of Project Leader: _____ Date: _____
(in block letters)

Signature of Project Leader

Signature of D/SLTC (or HoD)@

Signature of FLTC/
Dean of School

(Name in block letters)

(Name in block letters)

(Name in block letters)

@ To be signed by HoD if the PL is also the DLTC Chair, or if the Centre/Unit/Office does not have a DLTC; leave this blank if the PL is also the SLTC Chair.

The Project Leader and D/SLTC Secretary should each keep a copy of this *Completion Report* for records.
A copy of this *Completion Report* will be submitted along with the *F/SLTC Annual Report (Form 20)* to LTC/WGOBE as a supporting document.