

For discussion
on 7 February 2013

Legislative Council Panel on Education

Progress of Implementing the E-Textbook Market Development Scheme and the Use of E-platforms to Facilitate Teaching and Learning

Purpose

This paper briefs Members on the progress of implementing the E-Textbook Market Development Scheme (EMADS), including the arrangements for try-out of e-textbook deliverables in partner schools; and the development of e-platforms to further promote e-learning.

Background

2. In line with the global trend of harnessing technology to facilitate effective learning and teaching, the Government is committed to the promotion of Information Technology (IT) in education, and has invested more than \$9 billion since the 1998/99 school year for the implementation of a wide range of policy initiatives in this area. One of the goals of IT in education is *to develop in our students the attitude and capability for independent life-long learning*. This goal goes hand in hand with one of the seven learning goals as set out in the curriculum guide, which aims to *empower students to develop creative thinking and master independent learning skills*. Placing greater emphasis on self-directed learning (SDL), as reflected in literature¹ is conducive to achieving the said goals, while the use of IT could serve as a powerful catalyst.

3. With an IT-enriched learning environment in schools and at home, students could source information; interact and collaborate with peers, teachers and experts (across space and time); and receive timely feedback for their learning, thereby gradually cultivating the habit of taking responsibility of and monitoring their own learning and hence SDL.

4. Against this background and following the recommendation,

¹ Churches A. (2007), Educational Origami, Bloom's and ICT Tools, <http://edorigami.wikispaces.com/Bloom%27s+and+ICT+tools>; Solomon G. & Schrum L. (2010), ISTE, Web 2.0 How-To for Educators.

among others, of the Task Force to Review Learning and Teaching Materials that e-Learning resources should move beyond their existing supportive role to the more vital role of e-textbook, we launched the EMADS in June 2012. The Finance Committee has endorsed the creation of a commitment of \$50 million to provide a seeding grant to approved applications from non-profit making organisations under the EMADS.

Progress on Implementing EMADS

5. EMADS aims to facilitate and encourage the participation of potential and aspiring e-textbook developers to develop a diverse range of e-textbooks in line with our local curricula; as well as trying out a quality vetting and quality assurance mechanism for e-textbooks with a view to drawing up progressively a full-fledged Recommended Textbook List for e-Textbooks (e-RTL). Through the provision of a seeding grant to non-profit making developers, it also aims to encourage the participation of new market players and pave the way for the development of a new e-textbook market in the longer run.

6. The EMADS covers subjects from primary to junior secondary levels, i.e. Key Stages 1 to 3, and was open to two types of applicants, namely non-profit-making (NPM) organisations and other organisations. For successful NPM applicants, we will provide a seeding grant on a 50:50 matching basis, subject to a cap of around \$4 million per e-textbook set or 50% of the development cost of the e-textbook set concerned, whichever is the less.

7. A Steering Committee on the Selection, Quality Assurance and Review of the EMADS (Steering Committee) was set up to oversee the implementation of the EMADS. The Steering Committee comprises experienced school principals and teachers, representatives from the business and the IT sectors, as well as representatives of the Hong Kong Consumer Council, parents and the Hong Kong Education City Limited (HKECL). The Steering Committee set the criteria for assessing and approving applications under the EMADS.

Applications Received

8. Upon the close of a three-month application period on 24 September 2012, we received a total of 86 applications for the development of e-textbooks under the EMADS. Most of the applications cover the subjects of Mathematics (29 applications), English Language (22 applications) and Chinese Language (9 applications). The remaining 26

applications cover the subjects of Putonghua, General Studies, Science, Computer Literacy, History, Geography, Chinese History, Life and Society and Physical Education.

9. A total of 31 organisations submitted applications, 13 of which are non-profit-making organisations and 18 of which are other organisations. Among them, at least five are textbook publishing-related organisations and three are school and tertiary institutions.

Evaluation Process

10. All applications, irrespective of whether they were submitted by NPM organisations or other organisations, were subject to the same stringent vetting criteria. Only those applications which had satisfied the quality requirements (including professional aspects, technical aspects and team composition) as vetted by the IT Technical Team and respective Subject Vetting Panels (SVP), were considered further for their pricing commitment and implementation plan by the Pricing and Implementation Panel set up under the Steering Committee. In addition to fulfilling the quality criteria of printed textbooks, the successful applications were required to harness the benefits of e-features to enhance learning and teaching effectiveness.

Approved Applications

11. In November 2012, the Steering Committee approved a total of 30 applications for the development of e-textbooks under the EMADS. These 30 successful applications came from 13 applicants, including five NPM organisations with 12 applications, and eight other organisations with 18 applications. Among the 13 applicants, at least three are textbook publishing-related organisations, two are e-learning resources developers and two are tertiary institutions. Twenty-one applications belong to primary education and nine applications belong to secondary education. A list of successful applicants is at Annex.

12. In terms of subject coverage, seven applications cover the main subjects of Chinese Language, followed by Mathematics with six applications and English Language with five applications. The remaining 12 applications covered the subjects of General Studies (four applications), Computer Literacy (two applications), Putonghua (two applications), Geography (one application), Life and Society (one application) and Physical Education (two applications).

13. Compared with the prices of their printed counterparts on the same subject, these e-textbooks to be developed under the EMADS are generally priced lower, with the largest difference being over 60%.

14. Both the successful NPM applicants and other applicants are required to enter into an agreement with the Government, which requires them to commit to the sales price of the e-textbooks produced under the EMADS for four years and two years respectively.

Quality Assurance of EMADS and Partner Schools Scheme

15. The quality of the e-textbooks to be developed under the EMADS will be subject to stringent quality assurance criteria derived from our experiences in the vetting of printed textbooks including content, accuracy of concepts, information, presentation and language, etc. From the professional perspectives, the contents of the e-textbooks under the EMADS should be aligned with the curriculum aims and objectives in the relevant Key Learning Area curriculum/subject guide. They should provide accurate and up-to-date information and concepts, incorporate learning and assessment activities that provide feedback on students' performance effectively, allow for flexible arrangement of modules to support alternative learning strategies/paths and are written in language commensurate with the language standards of the students. On the technical side, the e-textbooks should be accessible by popular computing devices and should embed such e-features as print-on-demand function, intuitive navigation, multi-media elements, interactive activities, adjustable font size, annotation and bookmarking tools as well as other subject-specific requirements. A SVP would be set up for each set of e-textbook to review the quality of e-textbook deliverables. Each panel would consist of two external reviewers from experienced teachers, principals, professionals or academics and one IT expert from the IT in Education Section as well as subject officers from the Curriculum Development Institute (CDI).

16. As part of the quality assurance process, we have established the Partner Schools Scheme and recruited 89 Partner Schools through a competitive process to field-test the e-textbooks by three phases during their development stage for a period of around 15 months until the first quarter of 2014. The Partner Schools will provide feedback to the e-textbook developers for enhancement to the design and content of the e-textbooks. Each Partner School will be provided with a maximum of 16 tablet computers² to test the e-features of the e-textbooks. The Partner

² For use in test-out in classes in a group discussion setting.

School Scheme would help build the professional capacity of teachers and also provide useful experiences and practices for the reference of other schools in future.

17. We have set up a task force to monitor the development and progress of the try-out of the e-textbook deliverables and oversee the quality assurance mechanism. Members of the task force include experienced school principals and teachers from the Steering Committee as well as relevant subject officers from the CDI. The task force has already endorsed a set of review guidelines in trying out the e-textbook deliverables for reference of the Partner School teachers. We will conduct pre-meetings with the Partner Schools and e-textbook developers to discuss on the pedagogical requirements for the try-out process, and will also conduct lesson observations to facilitate assessment on the quality of the e-textbook deliverables in authentic classroom situations. We will provide timely feedbacks to the e-textbook developers after lesson observations. The e-textbook deliverables will be assessed by the respective SVP comprising internal reviewers from the Education Bureau and a pool of external reviewers from schools and tertiary institutions on a similar basis as that adopted for the vetting of printed textbooks. The evaluation reports from the SVP will be endorsed by the task force before submission to the Steering Committee for final approval.

18. Having gone through the stringent quality assurance process including field-testing, the e-textbooks developed under the EMADS will be automatically recognised for inclusion into the e-RTL, and will be launched in the market for use in the 2014/15 school year.

Reviews on the EMADS

19. We will conduct a review in the 2014/15 school year to examine the effectiveness of the EMADS, the quality assurance mechanism, the benefits e-textbooks generated and experiences gained especially through the Partner Schools Scheme. The result of the review will help refine our overall strategy in e-textbook development.

20. In view of the encouraging response towards the EMADS applications, we will also conduct an interim review with stakeholders after completion of the first phase field-testing of e-textbooks in the first quarter of 2013 on the need to invite a second round of applications for the EMADS within this year.

Promotion of E-learning through E-platforms to Facilitate Learning and Teaching

Use of E-learning Platform in Schools

21. E-learning platform is a learning system developed within the environment of the Internet or intranet which provides various learning tools such as learning material download, assignment submission, online tests, learning records, etc.³ In operational terms, e-platform to facilitate learning and teaching can be taken as learning management system (LMS) which *is a software application for the administration, documentation, tracking, reporting and delivery of courses or training programmes*. Under the Second IT in Education Strategy implemented in 2004 – 2007, funds were made available to all public sector schools to set up an e-learning platform and procure appropriate courseware. At present, all public sector schools have some form of LMS operating within their school network. Most if not all of these LMS are commercial solutions.

22. A common use of the LMS is for administration, i.e. used as an intranet. This includes holding students' information, as a communication platform for students, teachers and parents, recording daily roll call, signing up of extra-curriculum activities, booking of equipment and facilities, etc. When applying to learning and teaching, teachers can deliver learning materials such as notes and presentation slides to students and for students to submit assignments on the LMS. Some schools who have acquired additional functional modules on their LMS or use open-source solutions (Moodle and EdModo are commonly used) to track and report students' learning – “track and report systems”. With these, when and how students finish assignments or assessment items can be tracked and rudimentary learning data are available for teachers' reference. However, more advance use of LMS to host online courses is less common in schools.

Challenges

23. With wider use of online learning resources and services, students often have to log in to various e-learning resources/services systems to learn and/or to take on assessment tasks. Teachers also have to log in to these individual systems to extract the learning data of their students if such function is available. This mode of service delivery created much inconvenience to students and teachers as they have to remember an array of log in name and passwords to access to different e-learning

³ Phase (I) Study on Evaluating the Effectiveness of the Empowering Learning and Teaching with Information Technology' Strategy (2004/2007), Department of Mathematics, Science, Social Sciences and Technology, The Hong Kong Institute of Education, 2007

resources/services systems. E-learning resource providers will also face additional overheads in delivering their contents to schools as different schools may need different interface or solutions, and each provider will need to create and manage the large number of student accounts. All these issues will go along with the deployment of e-textbooks from EMADS.

Solution and Way Forward

24. The solution to this could be in the form of a “middle layer” to bridge the school-based LMS and the various e-learning resources/services systems. This “middle layer” or interface platform can (a) provide single-sign-on to all the e-learning resources/services systems for students and teachers, and (b) serve as a common data exchange platform so that learning data generated by students when using the learning systems can be transferred to schools “track and report systems” to provide teachers with a dashboard view of students’ learning. The interface platform can also lower the entrance barrier for small developers to deploy their products and services to schools.

25. The HKECL has been providing service to the education community through its Hong Kong Education City website (HKEdCity) since 2002. Some of the services provided are highlighted below:

- (a) Hosting of the EDB One-stop Portal for Learning and Teaching Resources housing over 10 000 pieces of e-learning resources for all key learning areas and at all level from Primary 1 to Secondary 6. These resources are accessible, free-of-charge, to teachers, students and parents;
- (b) The EdMall developed as recommended by the Working Group on Textbooks and e-Learning Resources Development in 2009, serves to provide a secured online one-stop shop where e-learning resources can be sourced and acquired;
- (c) The EdConnect Directory Service which allows schools, teachers and students to use a single sign-on to access e-textbooks and e-learning resources from different service providers. This will also provide a single platform for the developers to manage their resources more effectively for the development of e-textbooks and enhance communication among the concerned parties; and
- (d) The Online Question Bank housing assessment items from the Hong Kong Examinations and Assessment Authority and other

developers for students to use as online exercises. This service is accessible to schools and students at a charge.

26. With its robust platform and membership system for all students and teachers, HKECL is in an appropriate position to develop and operate the “middle layer” as mentioned in paragraph 24. While content developer could delivery their content and services to schools and students using their own platform, the middle layer provide an alternative solution which helps manage their resources more effectively, enhance communication among the concerned parties, and enhance the functionality and usability of their products. In fact, in response to the development of EMADS, HKECL has introduced the plans to extend the EdConnect Directory Service as an e-textbook interface platform to EMADS developers as well as other educational service providers and publishers in January 2013. The initial response is positive and supportive.

27. In the longer run, with the wider deployment of e-textbooks and the further development of e-learning resources market as well as LMS in schools, the middle-layer platform which connects both users and suppliers for the interchange of learning content and data and provides timely feedback would further facilitate the realisation of SDL with technology.

Advice Sought

28. Members are invited to note the progress of implementing the EMADS as set out in this paper and the development of e-platform to further promote e-learning.

Education Bureau
February 2013

List of Successful Applicants for EMADS

	Name of Applicant	Subject Set
Non-profit making Organisations	Department of Electronic Engineering, City University of Hong Kong	Computer Literacy Key Stage (KS)3 (Chinese and English) Mathematics KS3 (Chinese and English)
	Open Knowledge Association Limited	Chinese Language KS1 Chinese Language KS2
	Smart Education Charitable Foundation Limited	English Language KS1 English Language KS2 English Language KS3
	The University of Hong Kong	Geography KS3 (English)
	Moodle	Putonghua KS1 Putonghua KS2
Other Organisations	Active and Independent Education Limited	English Language KS1 English Language KS2 General Studies KS1 (Chinese) General Studies KS2 (Chinese)
	Galaxy e-Publishing House Limited	General Studies KS1 (Chinese) General Studies KS2 (Chinese)
	Medianet Holdings Limited	Life and Society KS3 (Chinese) Chinese Language KS1 Chinese Language KS2
	Panel Resources Limited	Mathematics KS2 (Chinese) Mathematics KS3 (English)
	Waza Cultural Enterprises Limited	Chinese Language KS1 Chinese Language KS2 Chinese Language KS3
	Wiseman Education Limited	Mathematics KS1 (Chinese)
	Innovative Net Learning Limited	Mathematics KS1 (Chinese)
	Physical Culture Publishing Company	Physical Education KS1 (Chinese) Physical Education KS2 (Chinese)