E-learning among Indonesian vocational high schools, the end of the school library era?

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E-learning in Indonesia began in mid-nineties with the advent of internet preceded by information technology which was introduced in Indonesia in late 1970s and early19 80s. However, those e-learning initiators hit hard by the economic and political crises which hit Indonesia in 1997s until early 21st century. Beginning the year 2000, many schools, especially senior high school, took the initiatives to conduct e-learning in their environments, in spite of the economic crises. Based on data available from the Department of national Education, a survey conducted toward high school Websites. A virtual visit and randomly selected physical visits to high schools situated in Jakarta, Yogyakarta (Central Java), Makassar (South Sulawesi) and Padang(West Sumatera) yielded result that those Websites mainly used for disseminating school profiles including name and address, principals and teaching staffs, facilities, extracurricular works etc, but none specially directed to e-learning materials. The research orientation changed to vocational high school with the assumption that the vocational high school graduates are geared toward working market hence the courses are directed to more practical application and subsequently can improved with e-learning activities. Based on data from National Library of Indonesia and Directorate of Vocational High School, purposive sampling was done. The criteria are (a) the school has conducted e-learning for at least five years; (b) agree to be interviewed; (c) has trained other schools on e-learning development; (d) own a school library (e) appointed by Directorate of Vocational High School as a pilot project (f) accessible economically from Jakarta so it is more convenient to visit. Using snowball method, from interview with Wikrama principal and teachers, yielded data on other vocational schools in many regions. Those vocational high schools are randomly selected, interviewed by volunteer researchers . The results are analysed and showed that e-learning in vocational high school is limited to facilities designed by the school such as commonly found in Intranet, the constraints mainly on physical infrastructure and e-learning spread because of lack of facilities from school library. The development of e-learning activities is separated from school library, a cause resulted from the wrong perception of the school principals. It is suggested that the development of e-learning should synchronised with school library because in the future, even right now, school library will developed into learning resource centres, in which e-learning is covered. However, it needs better understanding among school principals which in Indonesia who will decide the fate of school library, either like it or not.

Background

E-learning currently a buzz word among Indonesian educators, headmasters, school teachers and school librarians apart from educational policy makers and society. However, there is a confusion on the difference meaning between distance education and –learning. E-learning is different from distance education as in e-learning covers an ICT-based learning while distance education is not always covering IT. For example correspondence course which began in Indonesia in early 1950s is more proper called

distance education rather than e-learning. E-learning is this context means a form of learning that involves "electronic" or technology-based delivery of learning; examples of forms of delivery include individual computer-based delivery, Internet/Web delivery and virtual classroom delivery (Simon, Brooks, Wilkes 2005).

Inspired by some authors who wrote about e-learning in Indonesia especially at tertiary education, (Pannen 2005, 2006, Hasibuan 2005, Soekartawi. 2003) the author deliberately initiated research on e-learning limited to high schools.

Methodology

The first approach is getting data from the Department of National Education in form of a list of high school Websites. Virtual visits to some school Websites accredited by the public as "favourite" schools and physical visits by colleagues in some cities (Jakarta, Yogyakarta in Central Java, Padang in West Sumatera and Makassar in South Sulawesi) followed by interviews with the principals yielded results that school Websites' function mainly providing information on school profiles. It means that the school Websites provide information on school name and address, principals and teaching staffs, total of class rooms, tuition fee (not all information regarding tuition fees are complete), curriculum, extracurricular activities such as hobbies club, music, scouting etc., facilities such as labs, library [sic], canteen etc. If the school Websites mentioned the availability of e-learning materials, then the author accessed the sites and try to down load the materials. Almost all of e-learning materials listed at the school Websites could not be downloaded.

Abandoning the first approach as unsuccessful owing to the inability to access the e-learning materials, then the second approach began with selecting respondent based on purposive criteria. The criteria are (a) the school has conducted e-learning for at least five years; (b) agree to be interviewed; (c) has trained other schools on e-learning development; (d) own a school library (e) appointed by Directorate of Vocational High School as a pilot project (f) accessible economically from Jakarta so more convenient to visit. Based on that criteria, plus information from Division of School Libraries National Library of Indonesia and Directorate of Vocational High School, Department of National Education, the selected respondent is a modest vocational high school situated in Bogor, sixty kilometres south of Jakarta. The interview result then forwarded to other research colleagues in Yogyakarta (Central Java), Makassar (South Sulawesi) and Padang(West Sumatera). The research colleagues are actually the lecturers at various library schools in three provinces who also attracted to the e-learning. The results then analysed added with interviews to four out of nine members of National Standardization Board for Education, a powerful organ outside the Department of National Education which produces various standards on educational matters including the library buildings, collection, manpower, services.

Wikrama Vocational High School

Wikrama Vocational High School (hereafter called Wikrama) is a private, modest vocational high school, situated in a rather isolated location, bordering with rice fields. Wikrama is a vocational high school, class 10 through 12, with special emphasis on software engineering, computer and network technology, and office administration. Although the course name is rather fabulous, the content designed for students of grade 10 – 12 to developed by her or himself when she or he entering working market.

The e-learning courses developed by Wikrama covering typing test software, dictation test software, secretarial courses, office administration, English learning and others. The e-course materials then disseminated to other vocational high schools in the island of Java, Kalimantan, Sulawesi, part of Papua, Bali, West and East Nusa Tenggara; thank to the support and financial assistance from the Directorate of Vocational High School.

Wikrama developed the e-learning materials owing to the limited budget for the school library. As a private school depend on the tuition and some assistance from the public, the Wikrama is unable to provide enough budget for the library. Field visits to other vocational school proved such notion that at least 5% of the school budget for the school library as mentioned in IFLA School Library Manifesto and adopted by the National Library (Perpustakaan Nasional) is right now beyond the capabilities of the majority of Indonesian schools. The proposed draft of school library as mentioned in various drafts (Tim Kerja Perpustakaan Sekolah 2007) before submitted to National Standardization Board for Education also mentioned the sum of five percent out of school budget. So, at least for many vocational schools, the lack of school library budget spurred the teachers to develop e-learning materials so that the students could get the same access to the materials. Buying school textbooks is a heavy burden for the students, thanks to the inconsistency policy of each school which decided that every year the textbooks should changed!

On the other hand, the inability to subscribe to Internet Service Provider (ISP) compelled the school to limit e-learning in terms of using learning courses in CD or DVD forms, taught through the computer network in a limited coverage (local area network). Another approach is downloading materials from Internet usually in Bahasa Indonesia (the lingua franca of Indonesia)

E-learning at other vocational schools

Based on the success of Wikrama which developed its e-learning programme, the Directorate of Vocational High Education then sent the principal and some teachers to various vocational school in the country, especially in the islands of Bali, Kalimantan, Sulawesi, part of Papua and West and East Nusa Tenggara. The principal and teachers of Wikrama accompanied by officials of Directorate of Vocational High School tutored the other teachers mainly in the first component of e-learning. Basically, e-learning system consist of two main components (Hasibuan 2005). Firstly, Learning Management System (LMS) that can be defined as a system that organize how learning activities can be done by using any facilities, such as user administration, courses management, communication tools, both synchronous and asynchronous etc. Secondly Content development, that is

an activity that conducted to produce course material that ready to be delivered in the e-learning system. Content development process needs cooperation and collaboration between teacher as a course expert, instructional designer as someone who has expertise in learning design, and developer as someone who have expertise to create e-learning course materials.

The Wikrama team usually taught the first component while the second one is depend on the vocational schools because the curriculum for vocational high school are developed nation wide by the Department of National Education.

Analysis

What Wikrama pioneered and disseminated to the vocational high schools are electronic materials delivered through the computer network available at schools. The students theoretically can access the school server through Internet, but the unavailability of telephone connection, and the school capacity to maintain a 24-hour server limited to the real e-learning concepts. If using the Sloan Study (2005) as quoted by Pannen (2006) there are four e-learning course classification according to Sloan Study (Table 1)

Table1 E-learning course classification

Proportion of Content Delivered Online	**Type of Course**	**Typical Description**
0%	Traditional	Face to face course – with no ICT/Online technology used, instruction is delivered in writing or orally
1-29%	ICT/Web Facilitated	Course which uses ICT/Web=based technology to facilitate what is essentially a face to face course. Uses a course management system or web pages to post the syllabus and assignments, or e-mail for communication, for example
30-79%	Blended/Hybrid	Course that blends online and face to face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face to face meetings
80%+	Online/e-learning	A course where most of all of the content is delivered online, and interaction done virtually. Typically have nor or minimal face to face meetings

Then the majority or all vocation school e-learning capabilities are classed to group 2 i.e. limited ICT/Web base facilities. The teacher teaches the courses, aided by e-materials provided by the server and the students access and give answer or limited e-mail. The school e-learning capability limited to what we called Intranet.

If e-learning is interpreted in term of IT usage by vocational schools, then the findings are as follows:

(1) The school who set up a websites providing school profiles but not e-learning
(2) The school which conducted teaching by using CD, DVD for in-class teaching either related to or apart from school library service.
(3) The school which downloaded teaching materials from Internet, then developed its own electronic collections and accessible thorugh Intranet
(4) Those schools that developed e-learning activities with corelation to Internet but not correlated to school library
(5) The school set up an e-learning activities and strongly supported by the school library.

For the affluent high schools, downloading materials from Internet is not a problem thanks to their financial strength. However, this affluent schools are limited and most of these high schools are not (underlined from the author) vocational high school because none of the affluent high schools open the programme for vocational skills. High school students are prepared and geared to advanced studies in the university, even some of the international schools conducted their teaching in English so downloading English materials are not a problem.

Beside the those called international schools, there are some called international-level high schools and this year it was projected to 112 schools. The international level schools means teaching materials geared to International Baccalaurate or Cambridge or other international programmes, teaching language is in English and some in Bahasa Indonesia.

Four of the interviewees from also supported the findings that e-learning in Indonesia is still very limited or even non-exist in term of purely Web-based learning or belong to class four in which more than 80% of the materials are delivered online. They agreed that the current level of e-learning still at level 2.

Constraints

The development of e-learning facilities among vocational high school encountered some constraints. The first constraint is the infrastructure i.e. telephone connection. As the telephone connection is limited or unreliable then the connection to Internet- for those schools are well enough to subscribe to Internet Service Provider- is interfered. The spread of telephone distribution is still uneven and limited (Table 2)

Table 2 Infrastructure and HRD measurement

Country	Infrastructure measurement					HRD capital measurement	
	PC/100	Internet host/10,000	% Pop online	Telp/100	Cellular phone/100	Human Dev. Index	Info. Access Index

Australia	46.62	843.52	52.5	52.41	44.63	0.936	0.999
Indonesia	0.99	1.26	1.2	3.14	1.73	0.677	0.583
Malaysia	9.45	29.13	17.0	19.93	21.32	0.774	0.333
Singapore	48.31	437.56	49.3	48.45	68.38	0.876	0.333

Source: Iljas (2006)

Subscriber to ISP is increasing every year but still not enough for an archipelago like Indonesia (Table 3) with a huge population (220 million in the year 2006)

Table 3 Internet users in Indonesia

Year	Subscribers	Users
1998	134.000	512.000
1999	256.000	1.000.000
2000	400.000	1.900.000
2001	581.000	4.200.000
2002	667.000	4.500.000
2003	665.706	8.080.000
2004	1.087.428	11.226.143
2005	1.500.000	16.000.000

Sources : Data statistic APJII April 2004
http://www.apjii.or.id, 3 Desember December 2006

The second constraint concerning the provision of electricity. Electricity distribution is uneven, especially for the area outside Java. The uneven distribution still hindered many vocational schools, even in certain areas there are limitation of electricity. In 2005, the author found in a rural district, the regency distributed computers to primary schools as part of IT literacy programmes, but the electricity is lighted between 5 pm until 5. a.m. !

The third constraint is the lack of nation-wide-telecommunication network.

Although Internet can be included in the infrastructure, the infrastructure in term of telecommunication network, Internet is a by-product. The existing infrastructure in Idnonesia does not always support the e-learning programme. There are only two-government-provided-networks, i.e. those developed by Department of National Education through Sistem Jaringan Pendidikan Nasional (National Education Network System) operated by Center for Educational Communication while the other is INHERENT operated by DGHE. INHERENT just began its operation in the year 2006 based on the finding that the infrastructure measurements are lower than some countries. A local-based-distance-learning system developed by some Provincial Education Office such as Jaringan Informasi Pendidikan (Education Information Networks) developed by a municipality in West Sumatera province.

Constraints commonly found in e-learning-operated-university were not found in vocational schools. Language problems concerning intonation is not found as a constraint at e-learning-operated-vocational high school because they don't rather emphasis much on pronunciation then their counterpart in higher education. The contents especially on the technical drawings and mathematical computation are quite not a problem because the

vocational high school provides a much simpler technical drawings than the same course at university level. Anatomical drawings are not found at vocational high school, it is different from e-learning at medical schools which required high-tech detailed drawings.

Role of school library

The school library has no major role in providing additional information because of limited funds. In all cases regarding the school library in Indonesia, the "fate" of school library depends solely to the school principals or headmaster. If he or she understood or realized the importance of school library for the sake of teaching, then the school could granted enough budget to acquire the supporting materials. If he or she does not understand the school library role for the whole school, then the school library will be an unimportant attachment to the schools. These finding is rather disappointing because in the near future, even right now, the school library emerged as learning resource centres in which e-learning facilities are kept. The crucial problem in Indonesian school libraries is situated at principals' attitude toward school library, not on technical matters (Kelompok 2007)

The development of e-learning is pioneered by the teacher who are not always understand the role of school library, hence the e-learning progressed without school library support. In certain cases, such as found in Wikrama vocational high school and other vocational high schools who developed their e-learning programme after getting short courses from Wikrama teachers, the limited fund of school library spurred the e-learning development.

The ideal of e-learning is the activity of teaching through IT-based activity supported by the school library. Such facility is also found in Indonesia among the affluent high schools, usually a part of international school organisation or elite Indonesian private high schools. But for many vocational high schools, the lack of library facility pushed the teacher to develop their own teaching materials, but they also realized that the good teaching in e-learning involving library. This awakened some teachers to develop digital library and encouraged by the Directorate of Vocational High School. So the realization that making e-learning not as e-learning itself, but as a tool to equip students to stay up to date, information technology literate and to be competitive, in a flexible way began to emerged. If that realization connected to the school library, the rising of e-learning programme is not the end of school library but a collaborative effort toward better teaching for the students. The school library will become a part of e-learning, in fact the school library will developed into learning resource centre of which e-learning facilities are stored there. Therefore the Working group for School Library Manpower, established by the Department of National Education always emphasis the role of school principals in deciding the fate of school library (Kelompok 2006). One of its recommendation that in the future training of would-be-school-principals must include certain item on school librarianship.

Apparently, the development of e-learning is more advanced in higher education than the high school. Various activities on university-related-e-learning activities have been reported (Hadiana 2000, Hasibuan 2005, 2006; Liawatimena and Fisher 2006;

Lukman and Pardede 2004, Pannen, 2003,2005, 2006, Raskhmayani and Pardede 2004, Siswosumarto and Pardede 2004,Sulistyo 2007) albeit they still encountered various problems. In some areas such in Yogyakarta, Malang (East Java), Makassar (South Sulawesi) the university worked together with high schools to developep e-learning programmes and even some of them can be accessed as well downloaded. In Yogyakarta, Universitas Muhammadiyah Yogyakarta developed e-learning facilities for certain high school and vocational high schools and its e-learning materials can be accessed.

Conclusion

Based on purposive sampling for sample on e-learning among vocational high schools, the Wikrama vocational school was chosen. The interview yielded data on other vocational high schools which imitated and innovated the e-learning materials developed by Wikrama. Randomly selected interviews are conducted toward the vocational high schools and yielded the same information as those from Wikrama. Basically there constraints which are mainly on infrastructure, the e-learning is developed like Intranet and the urge to develop e-learning because of poor budget affected the school library.

With the unconscious separation of e-learning development from school library activities, then the fate of school library entirely depend on school principals; either worse or better. So it is suggested that in the future, training of would-be-school-principals should include some course on school librarianship so that the emerging e-learning is not an end to school library era, instead the school library becomes an active partner in e-learning activities.

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