eLearning plus facilitation – a novel approach for developing countries

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Abstract

eLearning plus facilitation is proposed as a method to improve human capacity building, especially for professional and specialist skill training in developing countries.

The paper draws upon experiences of developing and implementing conventional training and eLearning programmes for senior executives, engineers and human resource managers in the field of telecommunications.

Ten factors that contribute to the success of training programmes are outlined and related to four courses that were developed and run for policy and regulation, frequency spectrum management, numbering and designing web-based materials over the period 2000 to 2003.

The techniques for eLearning plus facilitation are described and the methodology is explained with reference to one training programme with participants from six developing countries in Asia. In this course, 43% of the participants achieved a score higher than the pass level and 33% of the participants achieved distinction, i.e., a score of 90% or higher, in the final assessment.

The costs and benefits in terms of improved course outcomes, scalability and sustainability of the proposed method are given.

1 Introduction

1.1 Background

Linguistically, politically, culturally and in a multitude of other ways the Asia and Pacific region is different from other regions. The languages, cultural issues, rate of development, size and demographics of the countries affect the knowledge transfer and learning process. In attempt to step towards a genuine shared Knowledge Society, the World Summit on the Information Society (WSIS) in 2003 identified one of three major spheres of education is eLearning (Samassékou, 2004). However, problems in gaining access to the Internet, technical infrastructure and the availability of computers for self study at work and at home add to the difficulties.

The development of learning management systems and eLearning content has addressed these issues and many courses are available that assist the learner to work on her/ his own and progress step-by-step through the courses. Audio, video and

multimedia techniques increase the learners' understanding of the difficult concepts.

Difficulties do remain; however, where learners have problems studying on their own and a method for them to seek help is required. Consultation with peers via web-board and learning management systems (LMS) can assist but timely access to a tutor is needed where sharing experiences with peers is not enough. Support is needed that helps to keep those learners focused and concentrating until their understanding has reached the desired levels and to motivate them to submit assignments on time and not to give up and drop out of the course.

The time and cost of having the owner, or the originators, of the training materials available to answer detailed questions makes that approach impractical but an intermediary called a "local tutor" or "facilitator" could fill this role in the training process.

The proposal is to adopt a hybrid approach; a formally organized training programme using a combination of the eLearning training methodology and materials plus a local facilitator. The role of the local facilitator is to monitor the participants' progress by accessing the learning management system, offering assistance to those in need and to be available to answer questions and generally advise and encourage those who experience difficulties for a number of reasons, including content, language, technical or time-constraint problems.

1.2 Communication and support

Often those learners seeking to develop themselves through eLearning programmes are already fully occupied with tasks because they are the most valuable human resources in their organizations.

The design of the course, and especially its duration and content, has to be matched to the ability of the participants and to their current work responsibilities and future aspirations. The process of building skills develops in a step-by-step process that is challenging but not so difficult that it causes interested participants to become demoralized, miss deadlines for assignment submission, devote less time than necessary to the training and drop-out.

2 Hybrid approach

2.1 Ten factors

Very recently, a significant body of research has focused on identifying various factors that ensure the effectiveness of eLearning. Nine factors are important when designing distance learning and eLearning courses. Only the present study discovered a new variable (e) local facilitation and introduced it into the domain of hybrid approach. They are:

(a) Involving stakeholders at the planning stage (Morse and Leoseng, 2003)

(b) Selecting the LMS (Huang and Yen, 2003; Yi and Hwang, 2003)

(c) Developing content including practical examples, exercises and case studies (For an interesting experiment, see Evia, 2004)

(d) Including essential references and providing additional references for further reading especially via www. (Wong and Horton, 2002)

(e) Introducing local facilitation

(f) Encouraging experience sharing (group working) (Kung, 2004)

(g) Providing consultation with tutors (Klau et al., 2003)

(h) Using multimedia to explain difficult concepts (Zhang and Nunamaker, 2004; Poulter and McMenemy, 2004)

(i) Providing on-self tests (See OFTA module)

(j) Benchmarking results of students' exercises for use by tutors on future courses (Morse, 2003)

The following four training programmes applied some of the ten factors;

their contributions are illustrated by drawing on official statistics eg 'hit' rates and students' achievement levels, and arrives at an overall evaluation of each programme's effectiveness.

2.2 Four training programmes

The characteristics varied between each of the four training programmes. The richness of materials characterized the success of the OFTA module while the methodology of the Thailand training which involved stakeholders from the beginning contributed to its success, the introduction of multi-media was a core component of success for the Numbering training and the web-base training applied a concept of local facilitation.

Table 1 Key factors

Training programmes	Hybrid approach									
	a	b	c	d	e	f	g	h	i	j
OFTA (Regulation)	•	•	•	•					•	
Thailand Training	•	•	•	•		•	•		•	•
Numbering	•	•	•	•				•	•	
Web-based	•	•	•	•	•	•	•	•		

OFTA (Regulation) Training Programme

The Office of the Telecommunication Authority (OFTA), Hong Kong (2000) has developed the OFTA ITU ASP CoE Virtual Training Centre (VTC), which is accessed from the OFTA web-site home page (http://www.itu-coe.ofta.gov.hk) without password. There are ten specialist modules including frequency spectrum management, the role of the independent regulator, universal service obligation etc; two of which have been translated from the original English into Chinese. A key element of the course is its self-study format with extensive use of practical examples, hyper-linked references, frequently asked questions and answers and on-self tests (factors c, d and i). This substantial knowledge base could make

an important contribution to large-scale training programmes where the users are heterogeneous. It is recommended to use a tutor supporting the learning at a distance for executives, engineers and training managers.

The number of "hits" per month on the OFTA VTC increased from 4170 per month in 2001 to 11,670 per month in 1994 and "visitors" from 790 per month in 2001 to 2080 per month in 2004. (Interview OFTA's webmaster, 2004, see also ITU News, 2002).

Policy and Regulation in Thailand Training Programme (2001 and 2002)

This twelve-week training programme was developed under the International Telecommunication Union (ITU) Asia and Pacific Centre of Excellence. The course was designed to meet the needs of a government department and telecommunication operating companies that were forming specialist groups to work within the new regulatory environment. It is a modular course using workshops and eLearning with facilitators overseas. Extensive use of case studies and group working methods (factors c, d, f and g) helped to ensure that all fifty participants successfully completed the course. It has been observed that one-country training programmes provide excellent conditions for group-working. Students work in groups throughout the course on a variety of tasks and assignments which are linked to the mission, vision and goals of their organizations. The best students can assist the others using local language and culture to support the transfer of knowledge and this helps the learning process. Follow-up included the development of self-development modules based on the students' assignments and these are permanently available without password for use by individual students or training centres (factor j) (Morse and Leoseng, 2003).

Numbering (2002)

This is a multi-media training course with content developed from the Australia Communications Authority (ACA) International Training Programme, where video tapes of lecturers' presentations and specialist content are the key drivers. A specialist eLearning consultant produced the eLearning materials including multimedia. On-self tests refer the students back to relevant text in case of errors. Extensive use of reference material is used to supplement the course (factors c, d, h and i). "Numbering" is hosted on the ITU HRD server in Geneva (http://www.elearningcentre.itu.int).

Designing Web-based Training Materials (2002-2003)

This eight-week course was designed and developed by ITU Human Resource Development Department as a trainer-of-trainer course and run with participants from several countries in Asia with materials up-loaded to an LMS. The course was run initially with periodic support from a tutor outside the Region. When the course was re-run with a locally assigned tutor supporting a main tutor located in Switzerland, the end result improved significantly.

During the re-run course some participants did not complete all the assignments (See Figure 1 below) and about 10 % dropped out at an early stage, but 43 % of the participants passed the course final assessment.

Figure 1 Score range
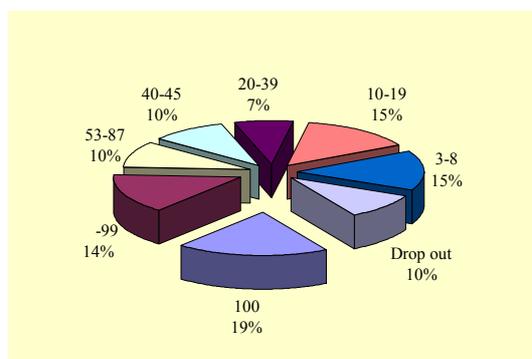
Source: Authors' survey, 2003

From Figure 1, nineteen percent of the enrolled participants achieved a 100% score in the final course assessment and many of the best performers were from least developed countries.

This result led the authors to the proposal to adopt eLearning and facilitation as a viable solution for professional and specialist skill training.

2.3 eLearning plus local facilitation

The use of local facilitation is generally more flexible, mobile, intense and collaborative than using overseas consultants in the same local conditions. With an emphasis on local facilitation, an eLearning course can be implemented at lower cost and with students reaching high achievement levels.

3 Case study – Designing web-based materials

3.1 Description of the course

The course entitled "Developing web-based training materials" is compared with a course with similar materials but run without the assistant tutor. The introduction and fifteen assignments were arranged over a period of two months. The learning experience takes place online, with a high level of support and peer-to-peer interaction. Forty-one participants enrolled for the course with most of them located in developing and least developed countries, including Myanmar, Laos PDR, Cambodia and Maldives, Pakistan, Vietnam and Thailand. Soonthorn Vassana [1] (from Thailand) was appointed assistant tutor supporting and

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[1] In the first course Soonthorn Vassana, who was a participant in the course, observed from questions posted on the LMS web-board that they were seeking support to complete their assignments because response from tutor was not immediate. When the course was re-run with new participants, Soonthorn, who performed best in the previous course was invited to become assistant tutor or local facilitator.

working under the direction of the lead tutor located in Switzerland.

3.2   Generic role of local facilitator

In general, the role of the facilitator was a two-way flow of communication to monitor the student's progress, answer questions and take action to guide and motivate the participants.
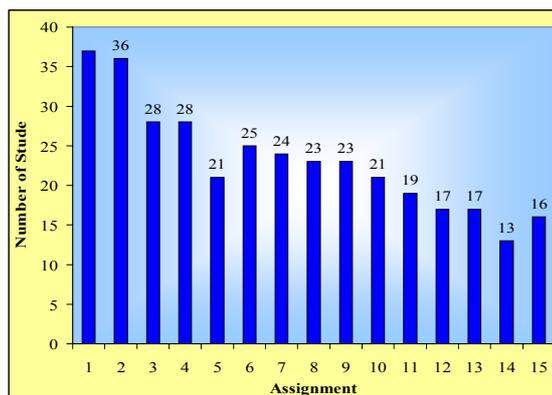
In particular, the local facilitator

- Provided support to the lead tutor for the online course.
- Assisted participants to familiarize themselves with the online course and requirements of the course.
- Maintained participants' interest and ensured that they achieved the course objectives.
- Gave feedback on each participant's contribution, suggesting possible improvements and alternative approaches to assist the participants to complete their assignments and to design and implement web-based training materials.
- Stimulated and promoted contributions and group discussion and provided ongoing support for students.
- Kept a statistical record of students' participation in the course.

3.3   Progress week by week

The graph in Figure 2 shows the number of assignments submitted by the students. This indicates how the participants satisfactorily completed the assignments set for that week.

Figure 2 Number of assignments submitted during eight weeks

Source: Authors' survey, 2003

1st Week: Course guide, Orientation, Web Toolkit

The first task is to tackle the motivational problems at the very beginning and give the participants a social incentive. The local facilitator gathered the information by communicating with each of them to find out what the underlying problems or limitations were. Initial administrative problems were quickly resolved and technical matters including how to access the LMS, user names and passwords were addressed. Giving an emphasis on social interaction, five marks were allocated for introducing themselves and actively participating on the bulletin board. The role of the local facilitator was explained and also that of the lead tutor, who would monitor progress and communicate with all the participants together in a web-meeting at least once per week. An easy-to-use of bulletin board became a good incentive. The attention of 37 participants was kept.

2nd Week: Infrastructure for web-based training

This is the important period to expand the concept of digital literacy to various means of communications. Participants arrived with a mixed range of experience

from basic to advanced skill. Most of the participants followed the dialogue between the tutor and the other participants on the bulletin board. At the same time, they also asked the local facilitator to clarify each activity, shared ideas and learned from others. The local facilitator needed to "talk" to every body in a manner that is easy to understand and friendly and evaluate their work with encouraging remarks as well as providing tips and guidances.

3rd Week: Principles of web-based training

The majority of participants found that this week needed extra work to concentrate on the crucial of technical skill sets ie WBT methods, instructional components and learning paths. In order to enhance the full participation, the local facilitator introduced the digital culture i.e. new ways and styles of communication, collaboration and creative ways of interacting via LMS. The facilitator goes further and stretches the participants by raising substantial questions and giving examples. This immediate feedback helped to keep morale high, motivated the 25 high potential participants to submit assignments by the due date or as soon as possible afterwards and remain focused even if they had difficulties with the language, content, or problems accessing the Internet.

4th Week: Course planning

Participants work on subjects directly related to their normal work (they were nominated by their organizations to attend the training because of the direct work-based relationship with the training). The local facilitator needs to play a more interactive role and applied complex skills to cope with diverse topics and contents. To reduce the pressure of work for who remained under the standard score for each assignment, special assistance was given. The local facilitator spent between 3 and 5 hours every day, after his normal work duties accessing the students activities on the LMS web-board and intervening when he saw the participants in difficulty or when asked. Many participants who missed assignment deadlines but submitted later admitted that they would have got lost without local facilitation.

5th Week: Writing content

In this week, the participants were asked to create teaching text, diagrams, pictures and multimedia. The participants started to ask each other using course web-mail. Sharing results between participants illustrated the standards that fellow students were achieving and this was an encouraging motivator. The local facilitator tracked the progress of all participants, so they could be chased whenever their progress became slow. At this stage, the local facilitator was coaching 23 participants who went on to achieved more than 40% in the final assessment.

6th week: Writing objectives, activities and assessment

Due to the difficulty of content, the participation tended to be further reduced (see from Figure 2, week 11 and 12). The local facilitator gives the learner a little extra encouragement and manages with repeated practice to keep them motivated to complete the course. The hit rate is highly related to the performance: one performer from a least developed country "hit" 2,808 times and achieved an excellent standard in the course.

7th week: Writing interaction and Computer Mediated Communication

A session on multimedia proved to be more problematic. The local facilitator found the majority of participants lacked of necessary skills/ prerequisite for advancement e.g. knowledge on html & Java script and another challenge was the technical infrastructure at each location. One-to-one tutoring was provided to

resolve these issues.

8th Week: Tutoring and Support

The participants were happy with the result at the end of the course. One comment from a participant 'I spent 20 hours per week. All of my activities were accomplished with the assistance from the local facilitator who guided, motivated, cheered up and corrected my tasks'.

4   Costs and Benefits

4.1   Costs

The following costs have been derived in discussion with one organization that is interested in running the hybrid training. The course director, or owner of the training materials, could be paid approximately US$ 750 and the local facilitator could receive approximately US$ 500 while the cost of local administration and preparation of CD ROMs for the participants could be US$ 250. The total is US$ 1,500 per course. If the course is run over seven weeks and if 20 participants successfully complete the training the cost will be US$ 75 per participant or US$ 10.7 per participant week for seven weeks.

If the training materials are owned by the organization and if the local facilitator is a member of the training centre running the course then the cost is further reduced.

4.2   Benefits: A snowball effect

Figure 3 shows a snowball effect of eLearning plus local facilitation which could be applied for a large training programme.

Figure 3 Positive Snowball Effect of eLearning plus local facilitation
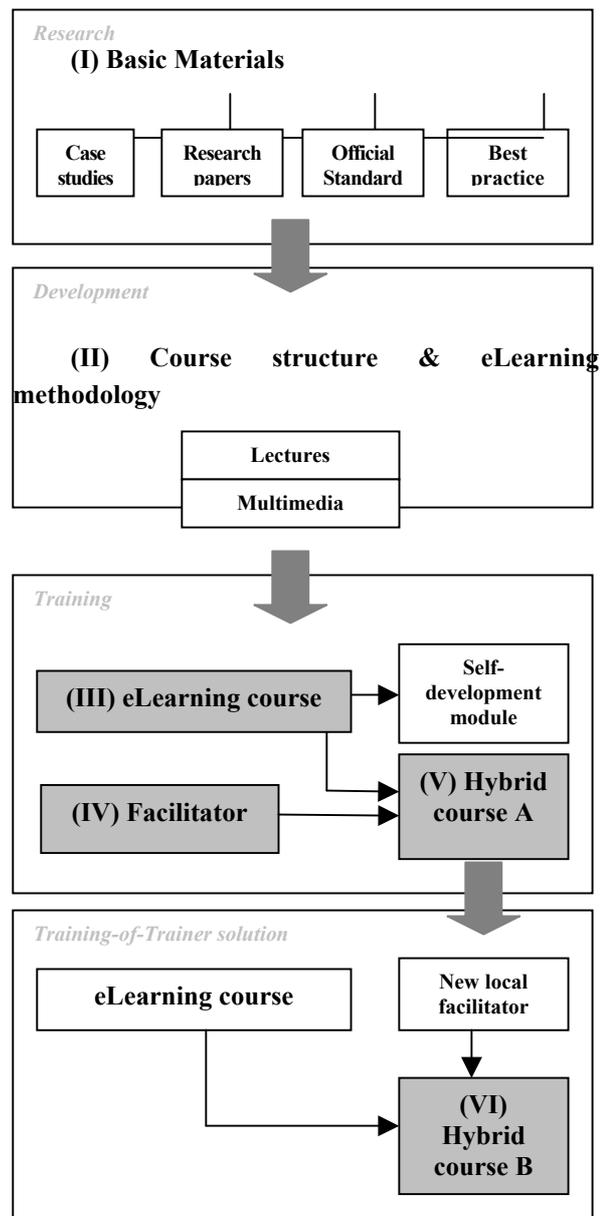
From Figure 3 training materials designed for self-study that apply pedagogically accepted methods of testing students' knowledge are valuable resources. Using these materials in formally organized training courses with local facilitation provides important added value for the following reasons.

(i) the original developer or owner of the materials is involved in the process

(ii) A range of documentation, archived materials, research papers, official standards and examples of best practice are prepared for use by a human resource development expert or specialist eLearning consultant, who will develop the training modules

(iii) The training is delivered either as eLearning materials for self-development accessible anywhere and anytime or in a formally run training programme, (hybrid course) in which case a local facilitator will be engaged. For the formally run course materials can be down-loaded and put in CD ROM format for installation in the participants' PCs to save time gaining access to and being connected to the Internet

(iv) The local facilitator, who does not have to be a member of the training staff gains experience as well in the process and may develop skills in tutoring that can be applied on other human capacity building projects.

(v) The materials for the hybrid course are permanently available on-line for future reference and refresher purposes after participants complete the course

(vi) The method has the unique ability to scale inexpensively with each re-run hybrid course having the possibility to produce at least one new local facilitator every time the course is run.

Reusing and sharing knowledge in the use of training materials and couching skills could further enhance the local facilitator's personal development. Some facilitators could progress to become consultants in this field working with international organizations or multi-national companies.

5   Conclusions and recommendations
The paper concludes that the hybrid method described in the paper is an effective way to build human capacity especially for professional development and transferring specialist skills.

The hybrid method uses existing high quality eLearning materials in formally organized courses with the addition of a local facilitator who will be involved on a daily basis throughout the duration of the course. Where materials do not exist in the desired format an eLearning specialist could be contracted to produce the eLearning course.

The extra cost of using a local facilitator is relatively small but the benefits of helping participants to perform to their best ability and achieve the highest marks is great.

The method can be scalable with each new course having the potential to produce another facilitator for a future course, thus a snowballing effect is produced, which is important where there are many scores or hundreds of people to be up-skilled with the same knowledge.

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Douglas et al. ELearning for Developing Countries: Bangladesh. approach. However, it has been shown that with the decrease in the digital divide (United Nations 2012; Wijetunga 2014) and the rise in the use of mobile computing and social networking applications, citizens of developing countries are increasingly connected and in a position to benefit from eLearning. ADR was selected to facilitate a rigorous approach to designing an eLearning solution drawing on the insights of established research and applying them in a novel circumstance. In particular, the design approach allowed thoughtful selection of eLearning trends in developed countries in the creation of a specific solution to the researched problem domain. When implementing such an approach, the learning and learning processes are mutually agreed upon, taking into account the mechanisms of cognition, mental and behavioral characteristics of students, and the "teacher-student" relationship is based on the principles of cooperation and freedom of choice. Education systems in any country are called upon to contribute to the realization of the basic tasks of the socioeconomic and cultural development of society, since it is the school or university that prepares a person for active work in various spheres of the economic, cultural, political life of society. Bwalya, Kelvin Joseph. "Botswana's Novel Approaches for Knowledge-Based Economy Facilitation: Issues, Policies and Contextual Framework." ICTs for Advancing Rural Communities and Human Development: Addressing the Digital Divide, edited by Susheel Chhabra, IGI Global, 2012, pp. 45-56. http://doi:10.4018/978-1-4666-0047-8.ch004. APA. Bwalya, K. J. (2012). Botswana's Novel Approaches for Knowledge-Based Economy Facilitation: Issues, Policies and Contextual Framework. In Chhabra, S. (Eds.), ICTs for Advancing Rural Communities and Human Development: Addressing the Digital Divide (pp. 45-