

Lessons Learned from an International e-Training

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1. Introduction

The Nuclear Training and Education Center (NTC) of KAERI is actively participating in the IAEA's Asian Network for Education in Nuclear Technology (ANENT), focusing on web-based nuclear education and training. The center has contributed, in particular, to the development of the ANENT web-portal including cyber platform [1, 2], and making relevant courses available on it [3]. As part of this effort, the first e-training was attempted with a course on energy planning jointly by NTC of KAERI, and Planning & Economic Studies Section (PESS) and Nuclear Knowledge Management Section (NKM) of IAEA.

The objective of the e-training was:

- to introduce the use of an IAEA model named as SIMPACTS (Simplified approach for estimating environmental impacts from electricity generation) for assessing environmental impacts from various electricity generations;
- to identify real problems as they are and consider solutions for an effective implementation of e-training courses.

SIMPACTS deals with sub-programs, i.e. AirPacts for a non-radiological air pollution, NukPacts for a radiological air pollution, HydroPacts for project impacts, and LiquidPacts for a radiological water pollution.

This paper discusses lessons learned from the perspective of the e-training host and an ANENT member.

2. Course Design Concept

The course was designed by PESS to attract the attention of the learners, facilitate an effective learning and avoid any unnecessary risk from the course operation as shown in Fig. 1. Accordingly, the design features were as follows:

- It was blended in the sense that the course consisted of on-line and off-line studies, i.e. self learning with the learning contents on the ANENT cyber platform, and a case study using software (SIMPACTS) provided on CD-Rom. This e-training will be combined with classroom based training.
- It introduced diverse distance training methods, e.g. video conferencing for the course opening, learning contents with exercises, and a case study in a group.

- It provided an IAEA on-line tutor with limited course duration (i.e. 1 week).

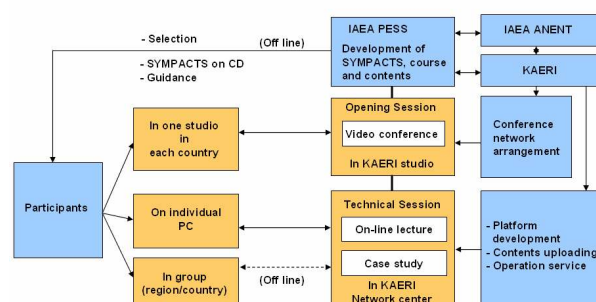


Fig. 1. The framework of course organization

Specifically, the e-training course contents consisted of 5 modules dealing with an introduction and different sub-programs of SIMPACTS. Then each module was designed to begin with a lecture in the form of text with voice and references, which was followed by quiz, hands-on, exercise and summary.

3. Course Preparation

The first discussion on the organization of the e-training was held in June 2006, when the ANENT cyber platform had been developed. Then sample contents developed by PESS was uploaded on the cyber platform and tested in May 2007, before holding a preparatory meeting between NTC, NKM and PESS in September 2008. Since then, intensive efforts were made for preparing for a video conferencing, operation of the course contents on the ANENT cyber platform, nomination of participants, provision of guidance while attending the course, provision of SIMPACTS on CD-Rom, and so forth.

Preparation for the video conferencing was time consuming due to a lack of clear understanding of the system to be used and the required procedures. The video conferencing facility in KAERI was designated as a network center, and one facility for each participating country was arranged. In case an organization of some participants had a suitable facility, it was arranged. While, in case there was no such facility available in a

participating country, a commercial facility was arranged by renting it through an international booking agency.

Preparation for the operation of the course contents on the ANENT cyber platform was conducted through 1) customization between the contents and platform; 2) a preliminary testing of the accessibility to and the operability of the contents on the cyber platform; and 3) a real testing with the participants. For the real testing a check list was circulated and appropriate measures were taken with the feedback.

4. Course Operation

The e-training was held at KAERI from 26-30 November 2007, with the attendance of 33 participants from 9 Asian countries, an IAEA staff member (as on-line tutor) and KAERI staff members (as course co-operator).

A video conference was held to open the course on the first day from 5 to 6 GMT at the KAERI video conferencing studio connecting studios from participating countries. The one hour event consisted of opening remarks, introduction of the participants, guidance on the course participation, and short Q&A. The operation was smooth and felt effective for attracting the participants.

Self learning on the use of SIMPACTS was conducted by the participants on the cyber platform and its progress was monitored by the course organizers. Also the tutor communicated with the participants through the cyber platform (notice, forum, file storage, etc.), e-mails and phone calls.

After completing the self learning, participants began the case study in a group in each country. They used the software, SIMPACTS, provided by IAEA on CD-Rom, by applying their country specific data prepared by themselves in accordance with the tutor's guidance. The study results were submitted to the tutor through the cyber platform (homework) or e-mail.

On the final day of the course, the tutor received the case study results, which were evaluated before issuing the course certificate individually. Also a questionnaire was sent to each participant.

5. Course Evaluation

The observation by the course organizers and feedback from the participants (Table 1) showed that the e-training was successful as a whole in the sense that:

- It was the first attempt of its kind (course design), and demonstrated its feasibility with a good participation;

- It allowed for learning about the involved mechanisms and identifying real issues for a full scope operation.

Major points of improvements from the review were:

- introducing internet based video conference technology;
- improvement of accessibility to and user-friendliness of the cyber platform with contents;
- improvement of contents, e.g. technical terminology;
- strengthening the IT infrastructure in some participating countries, and communications between learners and organizers, e.g. clear guidance, checking learning progress.

Table 1. Feedback from the participants

	Items Questioned	Responses	Remarks
Video Conference	Organization	OK (12), No (1: Malaysia)	Malaysia rented itself.
	Quality	OK (12), No (1: Pakistan, Voice)	Delayed, PPT not clear
	Usefulness	Very useful (13)	Need another 1 for closing.
Cyber Platform	LMS functions	OK (8) : Very slow (India) No (6) : Indonesia, Philippines)	Indonesia used CD version. Malaysia solved problem.
	Navigation within SYMPACTS	OK(9), No (5: Indonesia, Philippines)	Tracking needed. CD is OK.
	A/V Quality of SYMPACTS	OK (9), No (5: Indonesia, Philippines)	CD version is OK.
Technical Contents	Technical contents	OK (14)	Flexibility and manual needed.
	Clarity of lecture	OK (14), Needs more explanation (3)	Basic terminology, diagrams
	Usefulness of hands-on	OK (14), Very useful (2)	
	Usefulness of quiz/exercise	OK (14), Very useful (1)	
	Adequacy of the time	OK (7), No (7)	Case study

6. Conclusion

Through the successful e-training, NTC was able to demonstrate the performance of the ANENT cyber platform to which NTC contributed to the development, learn about the feasibility of the e-training approach, gain experience on operating international e-training and identifying areas for improvement, in particular, with the cyber platform.

The NTC will continue to promote regional and international e-training as an active member of the ANENT.

References

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