THE ENFORCEMENT OF THE E-LEARNING ACTIVITIES UNDER THE FRAMEWORK OF ANENT (ASIAN NETWORK FOR EDUCATION IN NUCLEAR TECHNOLOGY): BLENDED *LEANRING AND E-LEARNING*

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To promote the sharing and spreading of knowledge regarding nuclear science and technology, the IAEA (International Atomic Energy Agency) established ANENT as a partnership among Asian countries in 2004. Recently, KAERI (Korea Atomic Energy Research Institute) managed two courses: "A workshop for nuclear knowledge management" as a Blended learning course, and "How to manage a MOODLE-based LMS (learning management system)" in the format of e-Learning. By analyzing the results of these courses, where participants from member states in the vast Asian region participated in these courses synchronously and asynchronously, we found the key factors for running cyber courses successfully are as follow: the topics for a course must be selected based on the practical needs of the participants, elaborate instructional design for the course is required, and the course should be learner centered. The experiences and lessons learned from running these courses can be a good guide for e-Learning course design in the field of the nuclear education and training.

Keywords: Blended learning, e-learning, LMS, knowledge sharing

I. Introduction

The IAEA (International Atomic Energy Agency) had declared the nuclear Knowledge should be managed and reserved to well to prevent cutting form old generation just retiring to young generation who had little interest about nuclear technology. In this background, ANENT (Asian Network for Education in Nuclear Technology)[1], supported by the IAEA, had been organized as a partnership among Asian countries in 2004. Presently, including China, Japan, and Korea 19 Member states are joined and it does various activities to share the nuclear science and technology through the yearly coordination meeting, train the trainer workshop for to enforce e-Learning activities among member states.

Recently, 9 countries out of 19 member states had been reported that they are doing e-Learning activities in the field of nuclear education and training. So, fostering the sustainability of e-Learning activities among each member states, KAERI (Korea Atomic Energy Research Institute) had managed two courses: "A workshop for nuclear knowledge management" as a Blended learning course, and "How to manage a MOODLE-based LMS (learning management system)" in the format of e-Learning. In this paper, we investigate the results of two e-Learning courses and discuss the key points for successful operation of e-Learning course.

2. Blended learning[2] course

"A workshop for nuclear knowledge management" as a Blended learning course had been done during Aug. ~ Nov. 2014. The Face-to-face course was held during 5 days in Nov. 2014, where 19 participants attended from 17 member states. All of them had already accessed the pre-course site on a learning platform, in which all of them took an exam for what they had learned about nuclear knowledge management. All learning materials in the pre-course imported from that of the IAEA, which means almost same form of contents could be used in other course. As seen in the fig2, number of logs is peaked on Sep., when the on-line examination had been performed. We also found some participants visited the pre-course site after Face-to-face workshop on Nov., which means that the pre-course site helped participants to review what they had studied before.
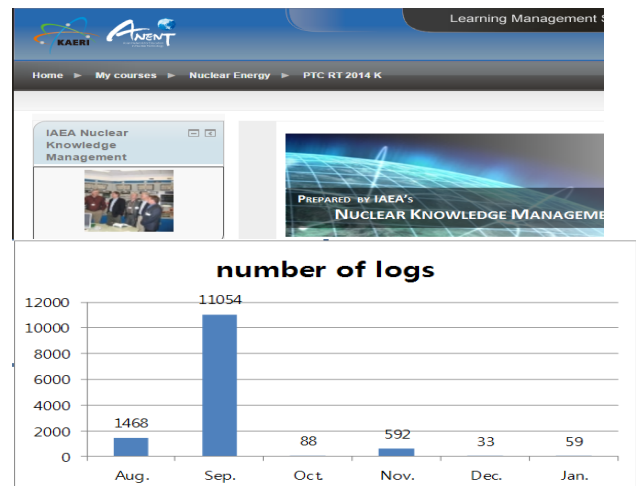

Figure 1 Pre-course site for NKM workshop
Figure 2 Number of logs to the pre-course site

3. e-learning course

46 participants 12 countries among Asian member states studied about "How to manage a MOODLE-based LMS (learning management system)" in the format of e-Learning during one month. This e-Learning course aimed for

participants to get skills of carrying out an on-line course in nuclear education and training as an aid for Face-to-face learning. Installing a LMS in developing county needs a lot of investment at initial stage, ANENT regional cyber learning platform (https://ilms.kaeri.re.kr) had been developed and provided for all ANENT member states.

Main instructional design characteristics of the e-Learning course are as follow: providing many on-line lectures using video conference s/w to increase intimacy between 4 lecturers and participants, assign for participants to do many learner-centered activities (blog, forum, homework, quiz), two on-line ceremonies (an opening and a closing ceremony), design a virtual e-Learning course about their interested fields on the cyber learning platform, and publish a certification of participation for 30 qualified participators. All video recorded clips during a video conference were uploaded in regional LMS for participants whose internet speed is not so fast as to attend on video conference.

The satisfaction survey after this course shows that an interest of the course (4.4/5.0), usefulness for their present work (4.5/5.0), and recommendation to colleagues for this course (4.2/5.0). From this relatively good satisfaction score of the participants, we think the e-Learning course achieved a goal like providing all participators of some confidence to practice an e-Learning course by using a MOODLE based LMS. Furthermore, participant low average age (middle of 30) and high ratio of male occupation rate among participants (30%) would be a promising signal for practicing e-Learning in developing countries.

4. Conclusion

To enforce e-Learning activities for nuclear knowledge sharing and spreading in Asian region, we executed a Blended learning course and an e-Learning course. The results of satisfaction survey after these courses were relatively high. Regarding these, we think, the key figures of successful managing on line courses depend on as follows: the practically needed topic selection, the elaborate instructional design of courses, and including learner centered activities (like video conferencing, assignment, and project based activities).

Reference

1) Visit https://www.anent-iaea.org

2) Maryam Tayebinik, Marlia Putch, (2012). "Blended Learning or E-learning?". IMACST, 3(1), 103-110.