

Creation of Health Resource Digital Contents and E-learning Program

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【Goal】

One of the major purposes of the St. Luke's College of Nursing COE Program is to disseminate our research results via websites for citizens and professionals. In doing so, however, consideration must be given as to how the information should be provided on the website for it to be effective. Effective information requires an understanding of how the information is accepted by its receivers, citizens in particular. Without this understanding it is difficult to develop a better system of information dissemination. In order to ensure a quality system, theoretical review is essential concerning the citizen-health information relationship, covering such issues as citizens' capability to understand and utilize health information (health literacy), effective methods of improving health literacy through health-related communication (health communication), and decision-making and decision-making support.

The goal of this project was to conduct a theoretical review in these related fields while developing a system to further empower citizens and nursing professionals through mutual interactions.

【Plan and Implementation Process】

1. Discussing and introducing e-learning

Discussion about e-learning was made from the standpoint of educating and learning among citizens and nursing professionals. For the purpose of collecting information about technology for developing and distributing e-learning contents, content development software and learning management systems (LMSs) were piloted, followed by the eventual introduction of Macromedia Breeze to start developing e-learning contents and streaming services.

2. Reviewing college information systems and mechanisms of providing information and determining structures

Interviews were made as to specific types of websites to be developed, the overall structure of the COE Project, status of progress in contents of each project, planning, and e-learning. There was also discussion about topics from e-learning from a bulletin board, a system of accumulating research results, information database development, information retrieval systems, and citizen's health counseling systems.

In order to put such a system in place at St. Luke's College of Nursing, various issues were discussed, including network system concepts, infrastructure, staffing, budget, and operation, policies for normal computer-related inquiries and requests, framework of promoting systemization, and support for establishing the structure of system management and operation. Some concerns involved the management of a website at college were pointed out, including the unclear roles and scopes of responsibility and weak authority of teams involved in the management, operation, and promotion of the system, the lack of unification of concepts of systemization with the resulting lack of coordination due to inability to understand movements and information in the school as a whole, and the unclear concept of college-wide systemization as part of the COE Program. In the future, therefore, it will be necessary to set up a section for a sustainable university information system, where full-time teaching staff is assigned with their roles and scopes of responsibility clearly presented and a certain level of decision-making power (authority) granted. Developing such a system will take time, however, and

thus for the time-being the network server will be set up externally with all management being outsourced to a subcontractor.

3. Collecting and publishing domestic and international examples of information distribution at other universities

We attempted to learn what systems and methods are used for community outreach activities in the leading region of the Internet world, North America (the United States and Canada). Selected from websites of universities and related organizations, especially hospitals, a number of informative e-learning contents and health information resources for citizens were organized into a list of links, called the "Contents of North American Universities Contributing to Public Health" and made available for viewing online. This should be used to promote university outreach activities not only at St. Luke's, but universities nationwide.

4. Creating Kango-net

A comprehensive website with a people-friendly interface has been developed as a system to turn the research outcomes of each project into web contents to be released for dissemination among citizens and nursing professionals. The objectives of the website have been streamlined to the following six items, and these should be subject to evaluation for each project as well as the entire program:

- 1) Providing information in order to support the enhancement of citizen health literacy
- 2) Providing opportunities to learn ways of looking at evidence and a forum for people to communicate
- 3) Emphasizing nursing professionals' ability to play a role in decision-making
- 4) Providing a place and assistance for citizens who have already acquired health literacy
- 5) Exploring implicit knowledge in narratives between citizens and nursing professionals to transform it into formal knowledge in each instance of 2) - 4)
- 6) Creating a community that has functions of empowerment and advocacy and forming social capital

5. Releasing health information and forming a community

1) Releasing health information

(1) Sections for information about individual projects

A page to provide topics and event information, a forum to report research results, and a list of useful links has been developed.

(2) Nursing knowledge

Pages developed include "What is nursing?" which serves as a self-introduction of nursing professionals as the website owners who provide citizens with information, "How to read healthcare information on the Internet" to guide users in looking for reliable information from among what is an unorganized mix of good and bad information on the Internet, "What is patient-centered medicine through EBM (evidence-based medicine)?" to help citizens understand evidence and make their own decisions, and the children-oriented "Kango-net for Kids" in response to the common demand for information as to what is nursing.

2) Forum for mutual communication: "Nursing Community"

- (1) "Message board": A counseling service page has been developed to include any theme, in which users who seek advice and those responding may indicate their respective occupations, with available options including "general citizen," "experienced citizen," "registered nurse/public health nurse/midwife," "other healthcare provider" and "nursing student" to choose from, giving consideration to clearly specify whether the knowledge comes from "experienced" citizens or nursing

professionals.

(2) Questionnaire asking about Kango-net and evaluation of each page

Questions include one that asks about usage frequency, "How did you know about Kango-net?" "What information have you found?" "Have you found the information you were looking for?" "Do you think you will come back again?" and "Please mention if there is anything that you think needs improving in the contents, display screen handling, or screen displaying of Kango-net." There has also been a point of evaluation provided at the end of each page across the website, which asks questions including "Has this article and/or information in it been helpful?" and "Please mention specifically what has or has not been useful."

6. Theoretical review and content development to enhance health literacy of citizens

In relation to reviewing issues related to health literacy, health communication, and decision making, we are developing contents for enhancing health literacy that are easy for both citizens and nursing professionals to understand and promote proactive participation to healthcare. Concepts and keywords used include: what is health?; salutogenesis; illness; risk factor; information; decision-making; EBM; health literacy; web trends; web2.0; health communication; narrative; group; open database; EBM and NBM; decision-making support; types of decision-making; medicalization; health promotion; behavioral modification theory; stress coping; positive coping; social support; advocacy; social capital; community; and consumer health informatics.

7. Reviewing Web2.0 trends and re-examining Kango-net

While there is a certain level of citizen participation in the "Message board" and evaluation for individual pages on Kango-net, it is yet to reach a point at which citizens form the contents. One of the recent trends in the web system is Web2.0, which draws interest with its system to form "collective knowledge" thanks to citizen participation and its openness. We have thus started discussing the possibility of employing some of its features including SNS, blogging, FAQs, and a community website.

【Goal Attainment】

1. Research practice activities

1) Regarding e-learning, theoretical review in learning science and educational technology and an overview of reports about its introduction at universities in Japan and overseas has led to the finding that instructional design is essential content for developing e-learning for citizens, and it requires utilization of technical knowledge in related fields of education, psychology, and informatics. It is important in e-learning to follow the learning needs of the subject and thus be learner- rather than educator-oriented, which overlaps with the theme of "people-centered."

As for systems for citizens, those considered appropriate have already been fully introduced, while contents about "nursing technology" and "How EBN should be used in clinical settings" for nursing professionals are scheduled to become available.

2) In reviewing examples of information services for citizens in North American universities, it has been found that websites are utilized as a tool for health education and promotion, that the levels of contents are particularly higher in the cases of large state/private universities or faculties/schools (medicine, nursing, public health, health science, health informatics, and pharmacy) where an integrated organization including the university hospital (such as a health science center) provides information or in the cases of an industry-government-academia partnership, and that the website is used as a tool to promote community outreach, which involves citizen participation in all processes starting from the development of evidence to dissemination of evidence and behavioral

modification. This has helped determine the direction Kango-net should take, and has shown that the basic concepts here are consistent with the trends in North America.

- 3) Kango-net has traffic of over 130,000 page views per month with some 26,000 unique users as of August 2007, showing a year-to-year increase by 5,000 users. Seen by page content, "Message board" has the largest traffic, followed by "Topics," "Tips for receiving good nursing service," and "What is nursing?", forming the four most-viewed pages, each with 4,000-6,000 visits and 3,000-4,000 unique users.
- 4) The responses to questionnaires about Kango-net and evaluation points on each page showed that a combined 85% of answers indicated either "very useful" or "reasonably useful" in the 5-grade rating, suggesting it receives a high evaluation overall.
- 5) We conduct theoretical reviews and develop web contents concerning the significance of health information and its uses for the purpose of improving health literacy of citizens, based on the structure plan (see Table 1).

2. Future directions

- 1) As a university system, a desirable system to be developed is one that is sustainable and allows the school to better understand the connection with citizens and nursing professionals. We will examine the possibilities of converging university websites, Kango-net, and the E-learning system, or those of the working Luke-Navi site, research centers, and the university library together to form a portal for citizens and nursing professionals that seek information.
- 2) We will attempt to form a community of participating citizens, employing Web2.0 functions as a system to form "collective knowledge," including SNS, blogging, FAQs, and community websites, making it a forum for participants to share the process of knowing and understanding information, then sharing it and acting together.
- 3) We will publish contents regarding the significance of health information and ways to use it, and then seek evaluation by citizens.

Table 1.

What is health?	Health is change as a result of interactions between humans and the environment
Problem occurs	Information is necessary as to what to do in response to a change
Seeking information	What is information?
	Information exists for the sake of better decision-making
	What is considered to serve more people is considered as evidence
	Where is information that has reliable evidence?
	Era in which sought-after health information is found on the web
	Receiving information requires communication
	Mind is developed through individual conversations and narratives
	Knowing what others do is also important
Decision-making	Ability to choose based on evidence and following one's heart

	Receiving help in deciding
	However, sole dependence on medicine does not bring good health
	Changing one's own mindset, behavior, and environment is necessary
Behavioral modification	Way to change lifestyles and environment
Stress	How to cope with stress in each of the above-mentioned processes
Social response	Valuing interpersonal connections
Social resources	Developing networks of mutual help
In the future	Utilizing and forming health information resources