Evaluation of a Web-based Mentor Functional System for Employment Support Training of Nurses who Have Not been Employed

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Abstract: We developed a mentor functional system combined with an e-learning training program to support nurses who have not been employed. Subsequently, to evaluate it, we conducted a survey using a constitutive questionnaire and a group interview of 14 monitors who had used it for a month. In the mentor functional system, the questions they asked were related exclusively to nursing techniques and new information, showing that their concern for reemployment had been reduced by taking counseling from the mentor. From these observations, it follows that the mentor functional system is effective.

1 INTRODUCTION

In Japan, acceleration of demographic aging has raised the national nursing shortage to prominence as a social issue. Therefore, it is necessary to support the reemployment of people with nursing qualifications who have not been employed (potential nurses). The potential nurses have concerns related to their lack of nursing ability (Hosoda, 2010). To relieve their concerns, we developed a training program by e-learning in our preceding study (Majima, 2010).

Because the potential nurses have a wide age range and because their levels of information communication technology (ICT) experiences vary among different individuals, it is necessary to support ex-nurses who want to be reemployed so that they can effectively address their learning. Consequently, for this research, we developed a mentor functional system to support their learning, which is useful with the training program developed in the previous research. We surveyed the users to evaluate the function, convenience, and ease of the system and how effectively it can support them.

2 RESEARCH PURPOSE

Our purposes are to develop a web-based mentor system for employment support training by e-learning. Then we conduct an empirical examination of it with research subjects, and gain additional information to increase the system functions and convenience of the mentor functional system.

3 RESEARCH METHOD

3.1 Research Participants

The people participating in the research as volunteers were 14 whose consent for research cooperation was obtained, of 19 who had attended the training workshop for reemployment held at O prefecture's nurse center.

3.2 Research Duration

The research was conducted about one month from November to December on 2011.

3.3 Learning System

3.3.1 Learning Content Presentation System

The developed e-learning system contains example materials mounted on an e-learning system for learning nursing practice examples (Nakamura,

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2010) as its basic learning content. The examples span a wide array of nursing fields such as basic, adult, maternal and pediatric, gerontological, psychiatric, community health, home care, and occupational care nursing (Majima, 2006).

This system enables nursing personnel to learn specialized knowledge, nursing skills, and past national exam questions in the context of the development of nursing processes (Figure1).

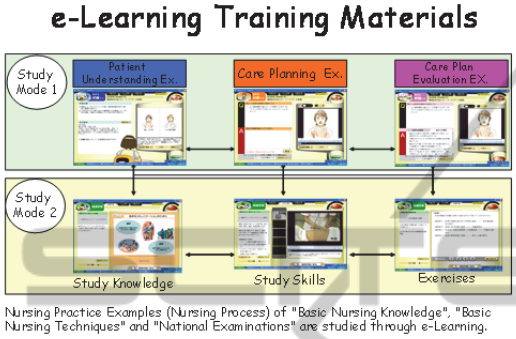

Figure 1: Overview of the e-learning system for studying nursing practice.

3.3.2 Configuration Management Function for Training Programs

This is the function by which, when a potential nurse (learner) inputs the prescribed requirements, the system automatically produces and presents a training program that is suitable for the person(Figure 2, Figure 3).

The prescribed requirements include the following: the year of separation from service; experienced medical departments; the medical department at the time of leaving service; a desired facility and a medical department the learner wishes to return; a desired area for practical training; and a desired learning pattern.

3.3.3 Mentor Assistance Function

This function assists the service by which a learning assistant, designated as the "mentor", answers questions or consultations from a person of learner on the Web (Figure 4).

1) A mentor inputs a proposed answer and keywords to a question from a person of learner and presses the search database button.

2) The system extracts educational materials matched to the keywords set by the mentor from the database and presents them.

3) The mentor selects appropriate ones among the presented educational materials and sends an answer to the learner.

4) The learner receives the answer and is able to view the educational materials to be learned.

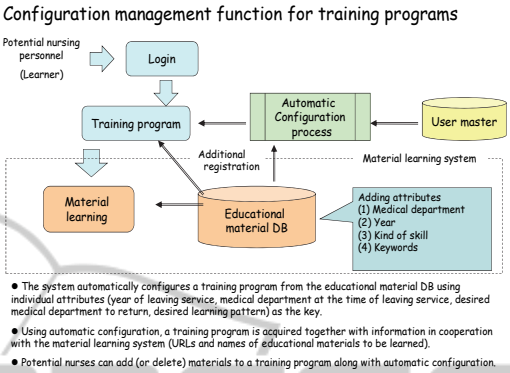

Figure 2: Configuration and flow for the training system.

Figure 3: e-Learning system for rehiring of unemployed nurses. http://enurse.nursing.osakfu-u.ac.jp/osusume/

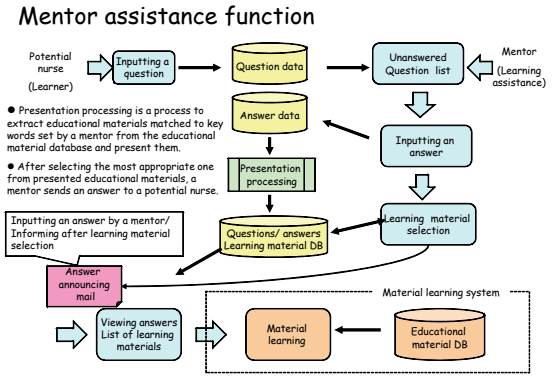

Figure 4: The flow of mentor assistance function.

3.4 Research Methods and Contents

We asked participants to use the training program developed for self-learning for one month during

which the training workshop to support reemployment was conducted.

After the subjects used the program, we surveyed them using a constitutive questionnaire and a group interview. The contents of the questionnaire include the evaluation of educational materials, the mode of offering them, and their improvement of both the training program and mentor functional system, and how the users' concerns might be changed using them.

Regarding methods of analysis, basic information was analyzed using descriptive statistics. Qualitative data were processed using qualitative descriptive analysis.

3.5 Ethical Considerations

The ethical affairs committee for research of the school to which all of our study group members belong approved the study project we conducted.

4 RESULTS

4.1 Basic Attributes

The 13 subjects were all women: 3 were in their 30s, and 10 were in their 40s. Regarding marriage status, 3 were unmarried, 10 were married, and one was divorced or bereaved. The average service year as a nurse was 6.3±5.2 years. The average unemployment duration was 12.9±7.1 years. The retirement reasons (multiple answers allowed) were marriage (answered by 6), job relations (by 4), health problems (by 4), and pregnancy and delivery (by 3).

4.2 Evaluation of the Training Program Material

The gross utility hours of the program were mode values of 21–24 hr. Regarding the access frequency, five subjects used it 2–3 times, four used it 4–5 times, and four used it 10–11 times. Regarding comprehensive evaluation of the program, three subjects answered "very good," six answered "good," and four answered "not very good."

As for evaluation of the educational material contents of the program, the following answers were extracted: "rich in content," "easily comprehended," "The procedure can be confirmed by images," and "The nurses' approach shown in the example is realistic and good," and "Knowledge cards and problem learning are informative." As for learning effects, "The concerns for reemployment can be reduced."

4.3 Offering Ways for Improvement in the Training Program

In terms of the system, it was judged as "easily accessible", but "It is difficult to find educational materials," "It takes much time to find it," and "I'm not familiar with using a PC, so I prefer to use books."

4.4 Evaluation of the Mentor System

The users of the mentor functional system were seven (50%). The questions asked by them were 13, which were related to confirmation of the contents of imaging techniques, newly provided information, and system problems (Table 1).

As for the comprehensive evaluation of the mentor functional system, five of seven answered "good," and the other two answered "not very good." About their asking the mentor questions, they reported: "I can ask about what would make me feel ashamed if I now asked about it in someone's face"; "Thinking that I can ask the mentor any question makes me feel confident." About the answers from the mentor, they said "They are respectful, easily understandable and friendly"; "Because the mentor showed the training program (educational material contents), it was good." About the time when they received the answer from the mentor, the following were extracted: "I wanted to receive an answer quickly," and "It was not easy access because I did not know when I would be answered."

4.5 Offering a Method and Improvement in the Mentor System

Regarding the window, "The space is small and unreadable." As for improvements, the following were extracted: "To make the button prominent" and "to take example questions." As a manner of utilization, the following suggestion was offered: "The questions might be put displayed for others."

4.6 Change of Users' Concerns about Reemployment using the Mentor System

As for concerns related to reemployment, ten users (71.4%) evaluated it, saying "Concerns can be reduced by the training program." As concerns, the

following were extracted: “I wonder whether I can keep up with the changes at medical sites”; “I have forgotten nursing techniques”; “How to communicate with others”; “How to respond to new techniques that nurses are conducting these days”; “How to use an electric chart and ordering system”; “I have anxiety about causing some medical accident”; “My own physical strength”; and “Job relations.

Table 1: Status of use of the mentor functional system and number of days taken for answering.

Classification	Contents of questions	Number of days *1
New information	Nursing record (electric chart)	0 day
	Typical drugs to manage pain	2 days
Changed roles	Urethral catheterization for a male patient	4 days
Confirmation of nursing techniques by images	Attachment of the AED electrode pad	5 days
	Massage after intramuscular injection	1 day
	Cuff pressure check in endotracheal suctioning	4 days
	Oxygen saturation in endotracheal suctioning	4 days
	Acidulated water infusion after tubal feeding	5 days
	Blood drawing procedure and sterilization	3 days
Answered questions	Nursing ethics: right of self-determination	2 days
	Prevention of patient misidentification (temporarily saved)	--
System-related	Opinion to the system	0 day
	Wrong display of registrants	3 days

*1 : Number of days taken for the user to receive an answer from the mentor

5 DISCUSSION

Two effects were revealed: the mentor functional system can support learning by the web, and it can reduce users’ concerns related to reemployment. Especially, the respectful answers and recommendation of educational materials from the mentor received high evaluation marks. From the questions asked of the mentor, it follows that the mentors should necessarily be clinical nurses who can provide the latest medical and nursing information, nurses who have produced the educational materials (so that they can answer the questions about the nursing technical images offered in the system), and system engineers who can respond to questions about the system itself.

The future tasks of the mentor functional system are to address some shortcomings. It cannot give timely responses to individual questions, and learning support is done exclusively between the user and the mentor. The users cannot mutually communicate. Therefore, we must develop a future mentor system using the latest ICT.

6 CONCLUSIONS

This e-learning system was developed to identify potential nursing personnel whose whereabouts might be unknown and to support their training for re-employment using the internet. In future studies, we plan to administer a post-learning questionnaire to users and to perform a comprehensive evaluation of the system, along with promotion of the system.

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REFERENCES

Hosoda Y., Hoshi K., et. al., 2010. Factors Related to the Clinical Competence and the Training Needs for Reemployment of Inactive Nurses: Toward the Development of an Effective Training Program for Reemployment Support, *Proceeding of the 26th Annual Conference of JSET,* pp.441-442

Majima Y., Nakamura Y., et. al., 2010 : Designing an E-learning System to Support Re-employment of Potential Nurses, *Proceedings of the IADIS International Conference, WWW/INTERNET 2010,* pp.402-405

Nakamura Y., Majima Y., et. al., 2010, Comparison of Training Needs for Rehiring of Unemployed Nurses and Nursing Supervisors, *11th International ICNE Conference,* Abstract Book, p57

Majima Y., So Y., Seta K., 2006. Framework for Problem-Solving Based Learning in Nursing Domain -An Experimental Study-, Learning by Effective Utilization of Technologies: *Facilitating Intercultural Understanding,* pp.625-628