A Case of an Asynchronous E-learning Course in Undergraduate Career Education toward Enhancement of Self-efficacy

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Abstract: This paper reports the practice of asynchronous e-learning course for undergraduate career education based on questionnaire survey of career decision making self-efficacy. Career development tasks for undergraduate students include self-understanding, school-to-Work transition, and independent career design. These problems are closely related to "Career Decision-Making Self-Efficacy: CDMSE" (Taylor & Betz 1983).The authors set up asynchronous e-learning course using Moodle. It's on credits transfer system and 36 students from 6 universities and 16 faculties took it. Each lesson consists of VOD, resources, and Forum module. Students must post a message and reply to other messages on forum each time, and peer review for career planning assignment is used at the 14th lesson. From the survey with CDMSE scale, the average of course students is higher than that of other nationwide survey. Although no remarkable change was recognized after the practice, students show favorable feedback on interaction with other students. Because of peer review using a real name, a tendency to praise or admire was seen in review messages. Thus almost all respondents said that they could find their good points through the practice. To enhance self-efficacy, further improvements are needed in specific learning design and peer review system for asynchronous e-learning.

INTRODUCTION

The Background of the Study

Recently in Japan, because of the severe employment situation, there're many university graduates who leave a job after a short period of employment and the number of young non-regular employees is increasing. With these problems as a backdrop, it has been made mandatory for higher educational institutions to conduct career education program both in the regular curriculum and the extracurricular activities. But there is a wide variety of goals and contents in undergraduate career education depending on educational research aim of an organization, a type of faculty or department, or a scale of the university, so it is difficult to explain the career education in a word. Furthermore, unlike Vocational and Technical Education for the purpose of acquisition of skills specifically, it is a significant issue how to measure the educational effects in a practice of career education toward career development.

Career Decision-Making Self-Efficacy

The Japanese Society for the Study of Career Education presents career development tasks for undergraduate students by each grade level (The Japanese Society for the Study of Career Education 2008). It includes self-understanding, school-to-Work transition, and independent career design. These tasks are closely related to "Career Decision-Making Self-Efficacy" (Taylor & Betz 1983).

Taylor & Betz introduced Bandura(1977)'s self-efficacy theory to career decision making domain and propose the concept of Career Decision-Making Self-Efficacy(in this paper, we term Career Decision-Making Self-Efficacy "CDMSE"), which means the self-efficacy for behaviors required in career decision making. CDMSE is closely related to actual career decision making behaviors and indecision of career course, and it is possible to modify with intervention. Taylor & Betz developed a measure of self-efficacy expectations with regard to 50 behaviors required in career decision making and Urakami(1995) developed a measure of self-efficacy expectations with regard to 30 behaviors required in career decision making for Japanese culture and society.

There are a lot of empirical studies on career decision-making self-efficacy in America from 1980s. Also in Japan, many studies about how to enhance CDMSE have been seen, but it has not been fully understood how to intervene adequately (Tominaga 2008). The problem about enhancement of CDMSE leaves room for further inquiry.

Peer Review to Enhance Self-efficacy

For the deepening of self-understanding and the development of self-efficacy, which is required in career education, a process to reflect on one's learning is important as well as active learning to make students to participate in a class. Peer evaluation is one way of students participation learning style. A peer evaluation format not only encourage students' involvement(Weaver & Cotrell 1986) and self-reflection(Ueno et al. 2008), but also enables students to learn from other students' works, to see others point of view, and to achieve the improvement of evaluation ability and improvement of one's own work(Fujihara et al. 2008). Because it is important in career education to get objective viewpoint in interaction with others, to deepen their self-understanding, and to lead to actual actions, it is suggested that a peer review form is an effective learning method for career education. In addition, Bandura (1977) cites four sources of efficacy expectations as an element that foster self-efficacy: achievement of performance behavior, agency experience, verbal persuasion, and emotional arousal. The authors make a hypothesis that associates these four sources of efficacy expectations with the elements of Peer Review learning in career education, as shown in Table1.

Table 1: Four Sources of Efficacy Expectations and

Four Sources of Efficacy Expectations	Elements of Peer Review in Career Education
PERFORMANCE ACCOMPLISHMENTS	• To draw up one's career plan • To make a presentation of career plan • To enhance evaluation capability
VICARIOUS EXPERIENCE	• To see and evaluate other students' career plan
VERBAL PERSUATION	• To receive other students' evaluation to one's career plan
EMOTIONAL AROUSAL	• To enjoy peer review

Therefore, we have practiced peer review learning of toward enhancement of self-efficacy in undergraduate career education courses, using the Moodle Workshop module in face-to-face class. As a result, it has been shown that students deepen awareness of career and CDMSE was significantly improved after the peer evaluation learning (Kuwahara et al. 2012). In this paper, we report the practice of asynchronous e-learning course of undergraduate career education based on the practice of face-to-face teaching, with aim to discuss whether it is possible to enhance CDMSE by peer review learning in an asynchronous e-learning course as well.

ONLINE CAREER EDUCATION COURSE

E-Koto Learning Systems Kyoto

Many universities are concentrated in Kyoto. Historically, Kyoto has developed as a city of universities. "The Consortium of Universities in Kyoto" is an organization with the aim of improving the levels of education and academic research conducted at member universities and junior colleges, developing one of the largest scale businesses in Japan. The Credit Exchange System is one of the core businesses of the consortium. It enables students to take courses that are offered at other universities. To make students inquisitive and more aware of a wide range of knowledge, a variety of subjects are provided so that students can take courses according to their interest. Since 2008 E-Learning Program awarded 3 year grant by Japan's Ministry of Education, Culture, Sports, Science and Technology, so the consortium developed e-learning credit exchange system which is called "e-koto learning". Open source Moodle was adopted as the learning management system to provide e-learning contents, and other functions such as syllabus, curriculum management, or course enrollment system have been developed as its own web application. In 2012, 13 asynchronous e-learning courses and 2 blended e-learning courses were provided.

Asynchronous E-learning Course

The authors set up career education course on E-Koto Learning Systems Kyoto in 2012. 36 students from 6 universities and 16 faculties took the course(15 second year students, 7 third year students, 14 more than fourth year students). Each lesson consists of video on demand contents (VOD) in SCORM format, resources, and Forum module (Figure1). Students have to post a message and reply to other students' messages on forum each time. In addition, peer review for career planning assignment on Forum module at the 14th lesson. An outline of the course is shown in Table2.

Figure 1: the Image of Asynchronous E-learning Course on Moodle

Table 2: An Outline of the Asynchronous E-learning Course

Lesson No.	Lesson Title	Students' Task	Scaffolding for Community Building
1	Orientation: Contemporary Society and Career Development	Forum: Post a message of self-introduction(upload a photo image if possible)	Self-introduction Video of Teacher Teacher's Comment to all messages
2	A Concept of Career and Life Span Development	Forum: Post a message & reply to more than one other message	Promote the exchange of students by requiring students to post a message and reply to other students' message
3	Think about Myself(1): Self-Understanding with Personal History	Forum: Upload personal history worksheet & reply to more than one other message	
4	The Diversification of Employment	Forum: Post a message & reply to more than one other message	
5	Life Course and Career(1)	Forum: Post a message & reply to more than one other message	
6	Life Course and Career(2)	Forum: Post a message & reply to more than one other message	
7	Problems about Young People Career	Forum: Post a message & reply to more than one other message	
8	Vocation: Business Industory and Job Description	Forum: Post a message & reply to more than one other message	
9	Think about Myself(2): Values and Vocational Attitude	Forum: Post a message & reply to more than one other message	
10	Basic Ability to Work in Society	Forum: Post a message only	
11	Case Study on Career Transition	Forum: Post a message & reply to more than one other message	
12	Think about Myself(3): Career Anchor	Forum: Post a message only	
13	Think about Myself(4): Dream, Goal, and Ten Years After	Create Career Plan Worksheet	
14	Peer Review of Career Plans	Upload Career Plan Work (first edition) & Comment to Other Students' Work	
15	Reflection of Peer Review	Submit Career Plan Work(final edition)	

METHODS

Classroom Practice

In asynchronous e-learning course for career education targeting 36 students, we conducted a peer review learning for career planning assignment. For assignment to be evaluated, it is required to evaluate three per person evaluators. As a peer evaluation learning system, we used Forum module (message board) of Moodle 2.0x. In order to clarify the evaluation criteria, the rubric of six evaluation aspects with 5 levels were presented to the students. The evaluation was carried out in the real name.

Problems of Peer Review in an Asynchronous E-learning Course

With Moodle Workshop module that has been used in the peer review in the practice of face-to-face classes, it is necessary for a teacher to switch phases of submission and evaluation at certain timing. In asynchronous e-learning courses, a progress of study is different depending on each learner, so we used Forum module instead of Workshop module of Moodle. Students uploaded one's career plan work to forum, viewed files mutually, and posted a comment with evaluation in a reply message.

Questionnaire Survey

To measure Career Decision-Making Self-Efficacy, we have carried out the investigation at 1st lesson and 15th lesson with Google form, using the career decision-making self-efficacy scale for college students (30 items, four- point scale) developed by Urakami (1995). For each item of the scale, giving one point to an answer of "no confidence at all", then four points to "very confident", and we use the total score of 30 items as CDMSE scale score. The number of valid responses was 21 at the 1st lesson (pre-survey), and 9 at the 15th lesson (post-survey). Further, in order to study the cognition for learning task was carried out after learning a questionnaire about motivation for mutual evaluation and creation of the career plans (five-point scale)., We have created the questions related to motivation with reference to the ARCS model, which is a problem solving approach to designing the motivational aspects of learning environments (Keller 2010; Suzuki, 1995).

RESULTS

Characteristics of the Students

The table 3 shows the overall average of CDMSE scale score of the survey at the first lesson.

In the "Career Attitude Survey of College Students 2007" conducted by Center for The Promotion of Excellence in Higher Education (Kyoto University) and Dentsu Scholarship Foundation, extensive nationwide research using the same scale as this paper has been used. The survey targeted 2013 undergraduate students (first-year and third-year student) in Japan (Urakami 2007). When compared to the average of the survey was 78.78 points (N=2013, Standard Deviation 14.95 points), it can be said that students with relatively high CDMSE have taken the career education courses of e-learning. The result supports previous study that students with higher CDMSE are more active on career-decision making behaviors.

Table 3: The Average of CDMSE of students (N=21)

	CDMSE
Average	90.29
(*SD*)	(*10.77*)

Changes in Career Decision-Making Self-Efficacy

23 students out of 36 students finished the course and get a credit, but only six students had answered both of pre- and post-test. Figure 2 shows the changes in the pre- and post-CDMSE scale score. Though the post-CDMSE shows a little increase, it was not significant at the 5% level from the result of paired t-test.
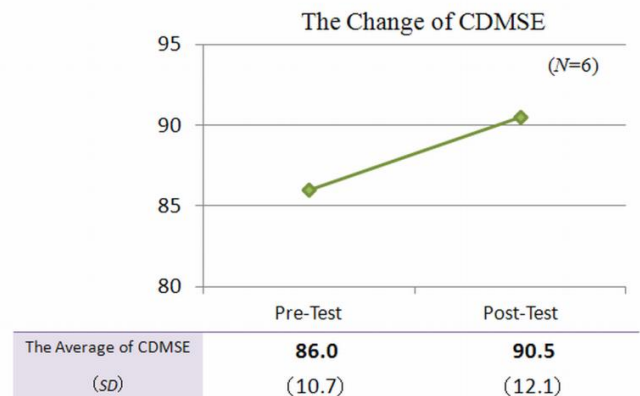

	Pre-Test	Post-Test
The Average of CDMSE	**86.0**	**90.5**
(*SD*)	(10.7)	(12.1)

Figure 2: the Change of CDMSE score

The Questionnaire Survey with ARCS Motivation Model

Table 4 shows the results of the questionnaire about the motivation for the creation of career plans and the peer review learning. As for peer review leaning, the averages of answers for questions about evaluating other students were generally higher than that about getting evaluation from other students. It is suggested that elements of confidence among the four factors of ARCS is especially related to CDMSE, but the answer to the "I gained confidence to continue it" was lower compared with other questions.

Table 4: The Answers for the Questions about Motivation for Tasks (*N*=13)

	Think about My Career Plan						
	Interesting. (A)	Challenging task for me. (R)	Relevant to me. (R)	I could think in my own way.(C)	I gained confidence to continue it.(C)	I was glad to do it.(S)	I want to try it again.(S)
Ave.	4.92	4.62	4.85	4.69	4.08	4.69	4.62
(SD)	(0.27)	(0.49)	(0.36)	(0.46)	(0.73)	(0.46)	(0.84)

	Evaluate Other Students						
	Interesting. (A)	Challenging task for me. (R)	Relevant to me. (R)	I could evaluate usefully for others. (C)	I gained confidence to continue it.(C)	I was glad to do it.(S)	I want to try it again.(S)
Ave.	4.38	3.92	4.15	4.46	3.54	4.23	3.77
(SD)	(1.15)	(1.00)	(1.03)	(0.84)	(1.22)	(0.80)	(1.19)

	Get Evaluation From Other Students						
	Interesting. (A)	Challenging task for me. (R)	Relevant to me. (R)	I could think in my own way.(C)	I gained confidence to continue it.(C)	I was glad to do it.(S)	I want to try it again.(S)
Ave.	4.62	4.15	4.46	4.62	3.92	4.38	4.15
(SD)	(0.62)	(1.03)	(0.63)	(0.62)	(0.92)	(0.84)	(1.23)

The Questionnaires for the Peer Review

Reaction of students was generally good about the exchange of ideas with students from other universities in peer review. In addition, when asked whether peer review helped to find of good points of one's own plan or improve the plan, many students answered that receiving an evaluation comment from others helped them to find good points in their own career plan (Table 5). From this result, it is suggested that there were many review messages of good content to praise or admire because peer review on Forum module was held in the real name.

From the free descriptive question, comments such as the following were obtained.

- There were a lot of different points of view in people of the same generation.
- I think that it was good to be able to feel the values and ideas of others.
- I don't know the timing was bad, or my content was hard to comment, but it was a little disappointing that I couldn't get comments so much.

Table 5: The Questionnaires for the Peer Review

Direction of Evaluation	Statement	Average (*SD*)
Get Evaluation From Other Students	I was able to find good points in my career plan.	4.25 (0.43)
	Peer review helped to improve my career plan.	3.75 (0.83)
Evaluate Other Students	I was able to find good points in my career plan.	3.88 (0.78)
	Peer review helped to improve my career plan.	4.38 (0.70)

CONCLUSION

In this study, we reported the practice of asynchronous e-learning course for undergraduate career education based on questionnaire survey of career decision making self-efficacy. By comparing the CDMSE data from a national survey, it became clear that the average CDMSE of undergraduate students who took asynchronous e-learning courses is higher than that of national average. After this, we want to characterize student by comparing the ratio of the low CDMSE group and the CDMSE high group.

The peer review learning in an asynchronous e-learning course, there is a problem of allocation of evaluators and the difference of learning progress. Further, because of peer review using a real name in the forum, a tendency to praise or admire was seen in review messages. It is necessary to review the practice in order to help improve the career plan submission. Although no remarkable change of CDMSE was recognized after the practice, students show favorable feedback on interaction with other students. Thus almost all respondents said that they could find their good points through the peer review learning. To enhance self-efficacy of the students with high CDMSE originally, further improvements are needed in specific learning design and peer review system for asynchronous e-learning, such as community development to encourage active peer comment or scaffolding for community building.

From the result of questionnaire survey with ARCS Motivation Model, we found that the answers about confidence for the task are slightly lower than the other elements. Previous studies indicate that cognition of tasks about career decision-making is closely related to a change of CDMSE (Shimomura 2000). It is suggested that to improve someone's confidence for peer review learning might enhance CDMSE, so we will expand the scope of our study to include cognition of tasks and make further investigations.

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