A DESIGN OF ONLINE LEARNING MATERIALS FOR DEVELOPMENT OF LEARNER AUTONOMY

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Abstract

There are many reports indicate that educational inequality may be widening during the pandemic, and various factors contribute to the educational disparities. Though the problems are big, we need to continue our efforts to improve the educational disparities, one step at a time. As an effort of the improvement, we concentrate on the factors attributed to learners, the difference between a learner successfully studies with no stress and one without good learning progress as expected is caused by whether he/she has adequate learning skills adjustable to online/HyFlex learning style or not. From literature research we can recognize such learning skills same as those acquired in learner autonomy/self-directed learning. When we designed the course, we employed competency-based learning and task centered instruction. As is well-known a wide variety of learning skills required for autonomous learning. It is impossible to acquire all skills with only exercises in a course only. Then we restrict our learning materials as to develop competencies of learner autonomy. Also, we assume the competences broadly as employability skills like written communication and the problem-solving skill because we regard those as essential for life-long continuous learning. As for the latter, from interviews of some students we found that our students have not been sufficiently trained to apply them practically, for example, in problem solving and learning practices, although they are familiar with the concepts of these employability skills. We carried out a practice providing an online course to learn such skills in a university, and then made sure that such online self-study is to be not only training of them practically but cultivating meta-learning skills.

Keywords: Self-directed learning, task centered instruction, reflection, online learning, Hyflex style.

1. Introduction

The pandemic of COVID-19 makes us to change teaching and learning style from traditional face to face to online/HyFlex. There are many reports indicate that educational inequality may be widening during the pandemic, and various factors contribute to the educational disparities. It seems that the inequality depends on various factors like economics, educational infrastructures, and so (e.g., Adedoyin & Soyka, 2020, Marinoni, van't Land, & Jensen, 2020; Blaskó, da Costa, & Schnepf, 2022). In Japan, many of similar survey were conducted by some institutions. We focused on an awareness survey of attitudes about educational disparities perceived as a result of the school closure measures targeting about 1,000 younger Japanese aged from 17 to 19 years old (Nippon-Foundation, 2020). The survey showed that 58.6% of respondents felt "there was an educational disparity due to school closures". It also indicated that there are many reasons attributed by students' environment, such as the introduction of online classes, the home environment, and the school closure period, but if we particularly concentrate on the factors attributed to learners, the difference between a learner successfully studies with no stress and one without good learning progress as expected is caused by whether he/she has adequate learning skills adjustable to online/HyFlex learning style or not. We consider that the reasons why some students could not learn independently via the online/HyFlex learning style where they have not developed the skills of self-directed learning (autonomous learning).

We cannot envisage educational method recovering old traditional face to face lecture style after the pandemic. Indeed, from a student survey on the state of online courses we cognize that many of students believe that the preferred learning style after the pandemic is online for lectures, face-to-face for practicums, and both formats for seminars (Schoo, 2021). Though instructors have been forced to develop and manage own online/HyFlex course by themselves during the pandemic, they usually are less familiar both with instructional design and online contents development (Hodges et. al., 2020, Ferri, Grifoni, & Guzzo, 2020). We believe that the student opinion is so realistic that we will be asked to provide education in a reasonable learning style makes sense to students. If we are to provide education in a manner consistent with students' aspirations, then any learner should acquire or increase the readiness of learner autonomy/self-directed learning. Thus, we have developed a training course to cultivate learning skills required in autonomous learning. The courses were provided as HyFlex and designed according to a proposal for building learner autonomy though online self-study and face-to-face collaboration with peers. All learning materials are published as open course modules of Moodle learning management system (LMS), because we hope to support instructors as described above. In the present paper we show the course design and the practice carried out for two academic years.

2. Course design and methodology

In our project we decided to modify an existing course. The course is so-called the first-year experience courses where students learn essential academic skills like logical writing, problem-solving skills and team-working. It is offered by multiple instructors with the same syllabus, uniform evaluation, and PBL (Project-Based Learning) format. So, students set their own project theme of interest and then make project teams. Usually, an instructor gives short lecture with an assigned textbook, then start to perform team activities determined by themselves. We would employ it to acquire or increase the readiness of learner autonomy that is learning style as self-study by offering all instruction and information via online. When we designed learning materials, we would try to decrease his/her feeling of the disadvantages in online self-study. The efforts for decreasing the disadvantages have studied in the field of distance education and learning (IU, 2023). The research field has long history so that there are many good practical examples and many fine research papers related or regarding with the distance education (Moore, 1997; Ferri, Grifoni, & Guzzo 2020). From the literature study, we consider that the disadvantages are roughly divided into three research results; the readiness of self-directed learning (Francom, 2010), the transactional distance theory (Moore, 1997), and equivalence theory (Simonson, 1999), and closely related each other. We follow the findings of the transactional distance theory in design of our course and development of the course materials (Bornt, 2011; Suzuki & Hiraoka 2021). The theory suggests that learner autonomy is cultivated with decreasing the total amount of scaffolding of learning (Suzuki & Hiraoka, 2021). Thus, we adopt a design with a certain level of structured materials and minimum level of verbal explanation by the instructor.

As we described above, we employ an existing course for our purpose. In developing the renovation of the existing course, we were faced with some constraints, particularly activities of students.

Figure 1. Schematic diagram in designing of the developing course.
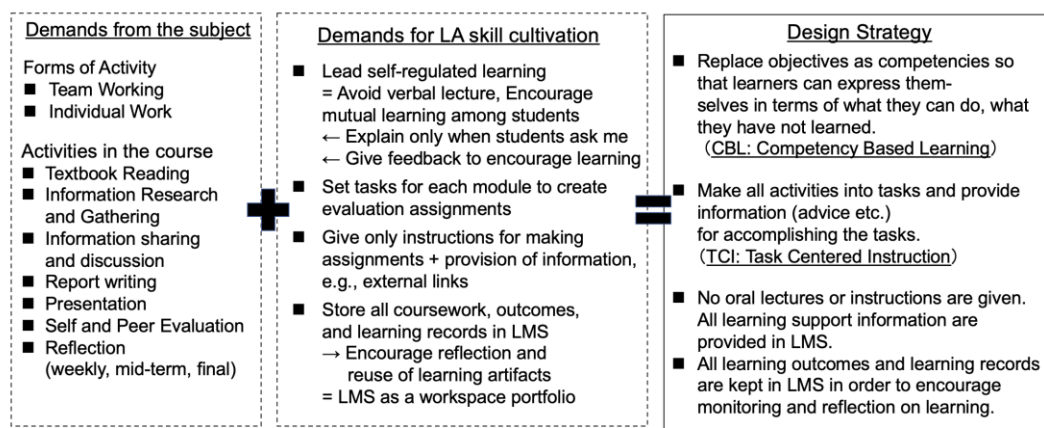
In our design work, we have had to impose on ourselves the consideration of the given requirements both from the subject matter and from the cultivation of learner autonomy. Figure 1 shows our strategy in design of the course schematically. After some consideration we decide to employ the framework of competency-based learning (Voorhees, 2001) and task centered instruction method (Merrill, 2007). Hereafter, we write the former as CBL and the latter as TCI. The method of CBL allows students to check their own achievement based on a competency-based view of academic achievement, which is based on "what they understand" but also on "what they can do. Development of learner autonomy requires students to reduce dependence on instructors and to encourage him/hers to take control of their own learning (Ertmer & Newby 1996). TCI, On the other hand, is an instructional method that focuses on the accomplishment of assignments (tasks). We equate assessment tasks and competencies so that our students naturally acquire the competencies through the creation of the assessment tasks. We decided to set up the competencies by replacing the subject achievement objectives with employability skill expressions in order to make it easier for students to understand what they should do as learning activities. Also, in consideration of students are not accustomed to self-study, we made the assessment tasks to be broken down into smaller-scale tasks (exercises) so that students can learn step-by-step and more clearly understand what they have achieved. We consider that CBL and TCI are one of the good methods for developing learner autonomy because students can easily grasp what they have learned and what skills they have acquired.

3. Practices for formative evaluation

We carried out courses using the learning materials developed in this project for two academic years. The practices are not only classes for credit, but also a formative evaluation of the learning materials and strategies for cultivating learner autonomy. The total number of students in the three classes over the two years is approximately 100. As we mentioned before, the courses were provided as HyFlex style where students conduct their learning though online self-study and collaboration with peers in face-to-face and/or virtual meetings. Usually, a blended course that can be freely varied is referred to as HyFlex-type. We call our courses HyFlex because we give students the choice of either face-to-face or online peer activities as well as self-study with online materials. We chose this learning style partly because of the Corona disaster, but also because we think in the future, project workings will be done more prolifically online as well as in person. In addition, we of course intend that collaborative learning with peers to reduce the students' isolation and disengagement of learning caused by online self-study.

It is not possible to immediately judge the extent to which this course has contributed to the students' progress for the development of learner autonomy, because we need to continuous monitoring of the students' learning activities and behavioral changes. But we can confirm, at the very least, many students thought that they had been able to acquire independent learning skills in this course from the results of students' course evaluation questionnaires. We show a result of the questionnaire of a class in Figure 2.

Figure 2. a result of students' course evaluation questionnaire.
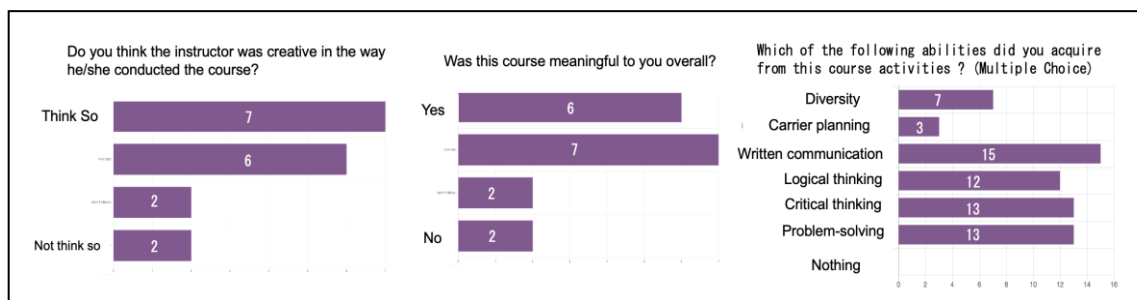
The response rate for this class was around 63% (N=17/27). As the left and middle figures indicate that most of our students thought the contents of learning and delivery methods, and also HyFlex style where they have online self-study and collaboration with peers in their own choice are generally well acceptable. We attribute this result to the students' experiences with online/HyFlex learning under the Corona disaster and consider that it is a natural consequence of the findings on the survey of the preferred learning styles after the pandemic described above (Schoo, 2021). The right figure shows self-evaluation of acquired skills through the learning activities in the course. The main subjects of the provided course are to acquire written communication (report writing) and problem-finding skills. We think that this diagram implies that the change from the traditional description of learning objectives

in the syllabus to a more direct description in terms of competencies has enabled the students to understand more clearly what they have acquired through their studies in the subject. It is interesting for us to note that many students indicated that a secondary effect of this practice was the development of logical and critical thinking. These skills are meta-learning skills for autonomous learning. We predict the cycle of self-study and sharing acquired knowledge with peers led to the responses.

While we received positive comments from most of participants, we also received negative feedbacks that we should revise in the future. They mainly referred to the amount of information provided online documents including task instructions and that of exercises. We say, more specifically, the quantity of both is too much. We consider the adjustment of the amount of learning in online distance learning and the amount of information to support self-study to be one of the difficult issues. Indeed, there are many practical reports on these matters. We have already addressed the comments on improvements that can be made easily, but appropriate revision of the content in the light of our own students' learning ability, while referring to previous research, is an issue for the future.

4. Concluding remarks

We have conducted to improve education to cultivate learner autonomy that is the stem of learners' ability to learn. It has been highlighted by the documents of educational inequality due to school closures associated with the pandemic. In the present paper we report the results of a formative evaluation exercise, which involved the instructional design and online contents of the developed course in accordance with the frameworks of the competency-based learning (CBL) and the task-centered instruction method (TCI). We consider that CBL and TCI are one of the good methods for developing learner autonomy because students can easily grasp what they have learned and what skills they have acquired. From the formative evaluation practices, we have confirmed that our students thought the contents of learning and delivery methods, and also HyFlex style where they have online self-study and collaboration with peers in their own choice are generally acceptable, while students have asked us to continually improve our learning materials and instructions. At least we could obtain adequate information to revise the course design and what students want from us to support their self-study that is development his/her learner autonomy.

We cannot envisage educational method recovering old traditional face to face lecture style after the pandemic, because students hope to proceed their learning in a reasonable and efficient approach, rather than the traditionally uniformed one as indicated by the report about the preferred learning styles after the pandemic. It is not possible to immediately judge the extent to which the present efforts have a contribution to the students' progress for the development of learner autonomy, because if it will be clear, we are demanded continuous monitoring of the students' learning activities and behavioral changes. But, at the very least, our learners confirm that they have been able to train in the self-study skills that are at the heart of learner autonomy throughout the experiences of our course. We expect that instructional strategies and delivery method as presented here could be one of the mainstreams of educational implementation in higher education near future.

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