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MOOC Based Educational Model for Pre-University Writing Program

Tosh YAMAMOTO
The Center for Teaching and Learning, Kansai University
Yamate 3-3-35, Suita, Osaka, Japan
E-mail: tosh@kansai-u.ac.jp

Tomohiko SASAKI
The Center for Teaching and Learning, Kansai University
Yamate 3-3-35, Suita, Osaka, Japan
E-mail: ssktom@gmail.com

Sadao HAYASHIDA
The Center for Teaching and Learning, Kansai University
Yamate 3-3-35, Suita, Osaka, Japan
E-mail: kokugopresada@gmail.com

The goal of this paper is to share the experience of developing brush-up online interactive programs enhanced with the concept of MOOC, for incoming freshmen, six months before the start of the academic life. Three programs were developed with three-tiered courses for Basic Math, English for Communication, and Writing Skills, with cooperation of members consisting of undergraduate students, office staff, and teaching staff in a team, making use of the project-based learning model. While developing the courses, the team identified and defined problems and worked on solving the problems with limited resources on campus.

The target readers for this paper are school administrators, IT administrators, and any other stakeholders on campus with the intention of improving the quality of education on campus. Especially, this paper shows a model of active learning across stakeholders beyond the borders of the classroom. It is a must reading for active learning advocates in the social constructive education model.

It is an understood practice that the MOOC education has been solely instructionally designed and developed by professionals including commercial vendors. However, Kansai University developed the learning contents, the instructional and learning model with the interactive aspects, as well as the delivery system from scratch. It is based on the innovative idea generation with careful learning design incorporating the concepts of knowledge mapping, “gamification”, social learning, and “one-sit learning and mastery”. The goal setting, the concept making and design, the knowledge mapping as well as the fundamental educational philosophy were defined and developed by the team.

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The goal of this paper is to share with readers our encountered difficulties, identified problems, and our optimal solutions to those problems in the course of development and its execution, and to demonstrate a showcase of a team-based project as an extension of active learning involving all major stakeholders on campus.

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1. Introduction

The theme of this paper is about a showcase example of the project-based learning endeavor involving all stakeholders of the Kansai University. This paper consists of the background information (the current issues of the university and the faced difficulties), the problem that the project team defined, and its associated optimal solution, the adopted strategic model as well as its strategies for execution. They are elaborated in order. In the end, some remarks for the future plan are made.

2. Background Information

This section provides the readers with essential background information of the Kansai University. Kansai University is one of the biggest size private universities, located in Osaka. Kansai University consists of thirteen colleges and the student population is about 34,000. Each year, over 8,000 freshmen are admitted to Kansai University. Although incoming students are admitted according to the admission standards of the colleges, about one third of the students show some weakness in the basic subject areas.[1] They are weak in Math, English, and the command of language. They need some brush-up programs before they start the academic life.

3. Problem Defined

Before defining the problem, it is worth mentioning the common characteristics of the target students. Although they are admitted to the university, they all have traumatic experience of failure in the high school learning experience. Thus, the development program cannot repeat the same methods of learning. Such students have a short span of attention for studying. On the other hand, they all spend a long time playing games on the computer or the smartphone. Although they are not high performing students in learning, they are excited and motivated to start a new phase in life. [2] It is totally new experience in life for them. At the same time, most of them will move to student housing

and thus they will be free from their daily parental care. This is a step forward to become autonomous adult members of the society.

Furthermore, those students have the smartphone with them all day for communication as well as socialization. The smartphones are the indispensable tool for their growth. They are not afraid of using IT as a tool to make their life comfortable.

Till the end of the academic year of 2013, the university outsourced such brush-up programs to outside vendors. There were two grave difficulties. The quality of the learning contents offered by such vendors is not designed for the low performing students. The learning contents are diverted from the cram school programs. For the students who almost failed in such programs, such learning contents simply lead to traumatic experience of failure in study. Further, the brush-up program lasts only for six months in one academic year, the costs for such license fee are 60,000 – 80,000 yen a student. Kansai University has the policy to cover such costs. There are over 3,000 students who go through such programs. The cost for such program is becoming a burden for the university.

4. Concept and Design

Having the issues mentioned above, the development team designed the project concept shown in Figure I. The target students for the Pre-University Education program were defined as those students who were admitted to the university through the admission office test or the admission upon recommendation other than the annually scheduled regular admission tests. Their academic performance may be lower than the admission standards set by the colleges. In order to have those students ready for the academic life, the program set up three levels according to the academic readiness, which are Level A for the lowest, Level B for the intermediate that showed weakness in some content areas, and Level C for those who needed some brush-up contents to master the basic contents. It is noted that the curriculum for all the levels seamlessly feeds into the remedial program contents of the regular academic program for freshmen. [3]

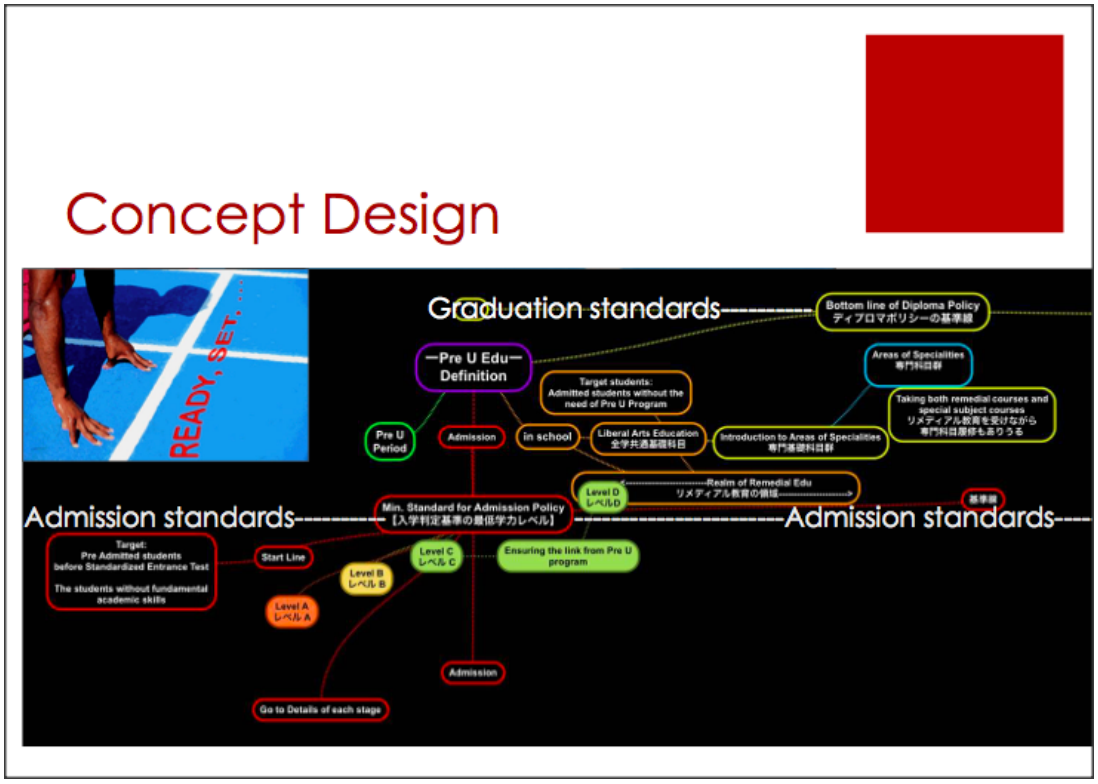

Figure I. Design

4.1. Learning Environment and Learning Tool

The project team worked on the environment, focusing on the educational philosophy or principle, the instructional design, the curriculum design, the contents design, the interface design, the learning flow, the humane interface design, and “gamification” and MOOC features. [4]

In order to customize the learning contents to fit the students’ short span of attention, the program established the learning model, which is based on the principle of “One Sit Learning and Mastery,” where a student sits down to work on a subject matter for five to fifteen minutes and masters its key concept before he or she stands up to take the next action. Each level consists of 30 short lessons, reflecting the knowledge map of the essential contents. In order to compact the learning contents or the knowledge contents in a short time span, a concise instructional video is included in a lesson to arouse the learning curiosity in addition to the text version of the contents. [5] Furthermore, such a video offers a bird’s eye view of what to learn and master in a lesson. Each lesson consists of an instructional video, the learning material in text and graphics, interactive learning activities, and a check up test for mastery. [6] Refer to Figure II.

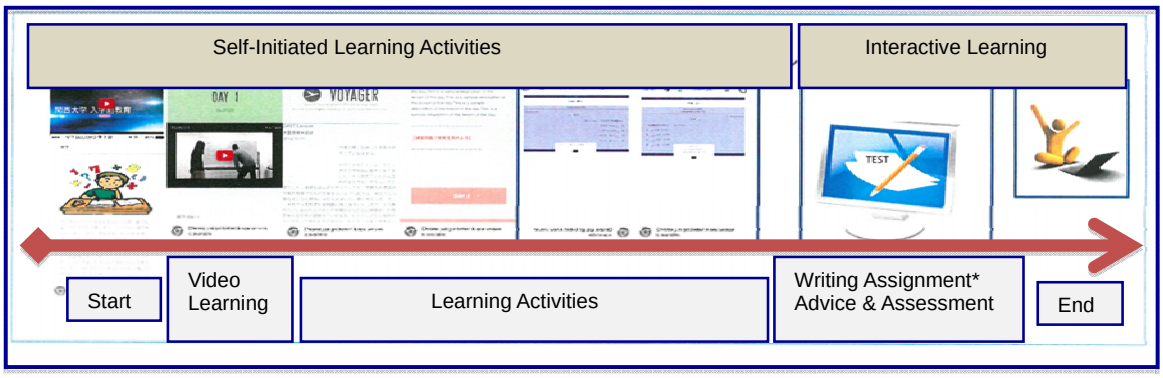

Figure II. Learning Flow Design

Based on the concept design of the program, three brush-up programs were developed. They were English for Communication, Basic Math, and Language Arts, as shown in Figure III. Each subject consisted of three levels with 30 lesson modules. The 30 lesson modules were instructionally designed according to the knowledge map developed by the project team.

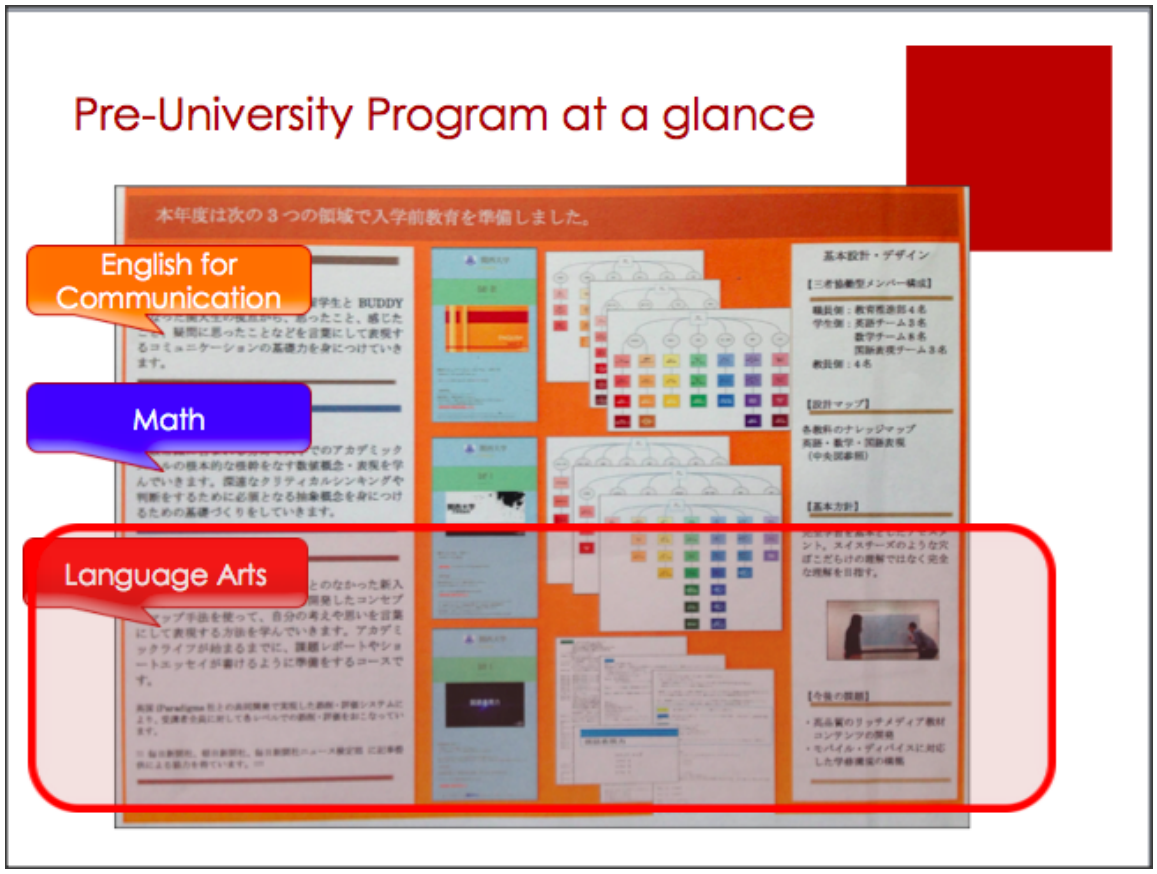

Figure III. Three Pre-University Brush-up Program

In what follows, for ease of exposition, the rest of the paper elaborates the language arts programs as the representative of the entire program due to the limitation of the pages.

4.2. Curriculum and Contents Structure

It should be emphasized that all students do not have any learning experience of writing in any form of experience except for a book report in the 1-12 education. Thus, in order for them to be ready for writing an essay or a term paper, there must be some boost program.

The curriculum was organized by three levels to develop the writing skills for various academic purposes. [7] The goal of the lowest level was focused on the development of the coherent writing skill to express their emotions as well as the logical reasoning process in words. The learning contents also used newspaper articles reporting events or plans as well as the text messages in the social media to develop the coherent writing skill with the precedence relation.

The goal for the intermediate level was for developing the writing skill to report the coherent reasoning process and the result of an event or concept from a single perspective. The learning materials were developed from editorials from the newspaper. First, editorials were analyzed using worksheets to convert the content of the editorial to concept maps by separating the facts and the author's reasoning by the color-coding technique. When completed, students were told to rewrite their versions of editorials only based on their concept maps.

The most advanced level was for writing a short essay weighing pros and cons of various views of a certain theme. In each series of learning consisting of several lesson modules, the students were asked to conduct a quick research on a given theme to identify various views of the given theme. After understanding the claimed points of various views, they were asked to report their understanding with their own words. Finally, they needed to clarify where they stand in the various claims with solid reasons.

In this way, the students will be ready for writing term papers as they advanced to the academic life.

4.3. Video Contents & Interactive Contents

Most of the MOOC contents were developed by the student team. Based on the knowledge maps, the student team discussed and worked on the storyboard for each learning module. Considering the attention span of the students, the team decided to make the video within a bearable length of five minutes or less. In this way, the students will not have to fast forward or skip the video in learning. It was also designed that the video contents were entirely delivered to the students by the casting of the members in the student development team and thus placed at the center of learning. Here, the positive effect of peer learning was employed. Learning from the same age group is robust when it comes to the fundamental learning materials.

In order to cut down on extra costs for developing the video contents, a frugal approach was employed. The video contents were solely produced by iPhones/iPads and a series of APPS for video contents creation. For example, for the development of the opening and ending videos, such

APPs as Intro Designer were employed, instead of the high-end powerful PCs. For producing video contents clips, the default iPhone APP, Camera, was used, mounting the iPhone on a tripod. And for editing raw video clips, a video editing APP called Cute CUT or Adobe Premiere was employed.

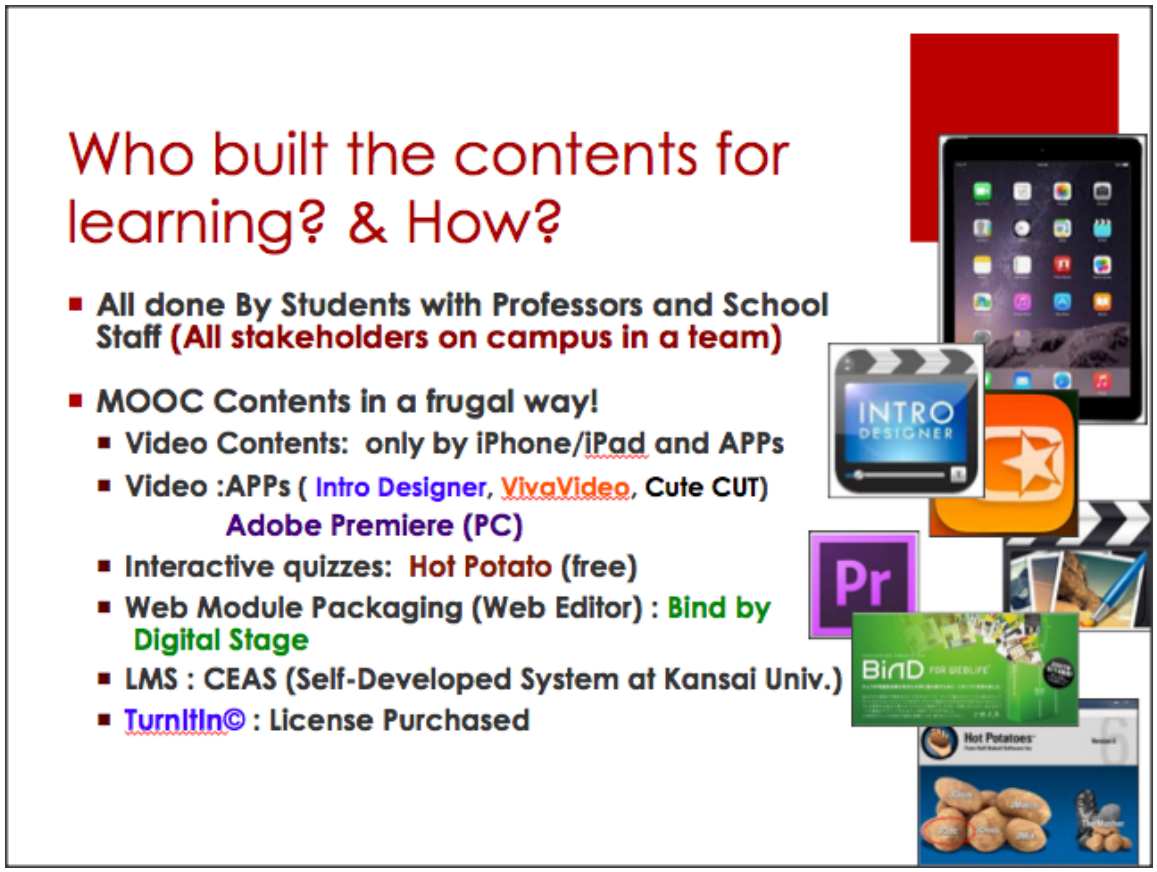

Figure IV. Development in a Frugal Way

In developing the interactive contents or exercises for internalization, the fee software called Hot Potato was exclusively used to generate various types of quizzes. In addition, worksheets for internalization were developed to enhance learning by the development team. Learning modules were crafted by a Web editor called Bind by Digital Stage. In order to cut down on the license fees for The Learning Management System to deliver the contents, the in-house developed LMS called CEAS was employed. (See Figures IV.)

The language program was designed with a unique feature of two-step correctional advice and assessment. When an assignment was turned in, it was first returned with editorial comments for improvement. And the improved assignment was turned in, it was graded with the recognition of improvement as well as the words of encouragement for further learning. If this process was all done

by hand, it would take at least twenty to thirty minutes for the editorial feedback and assessment per assignment. There must be more efficient method required. (See Figures V, VI & VII.)

Further, the program must not be tolerant when it comes to the students' plagiarism, in other words, copying from other's work without permission. In order to realize such features in the program, the program employed TurnItIn® developed by iParadigms, LLC. ((See Figures VIII.)

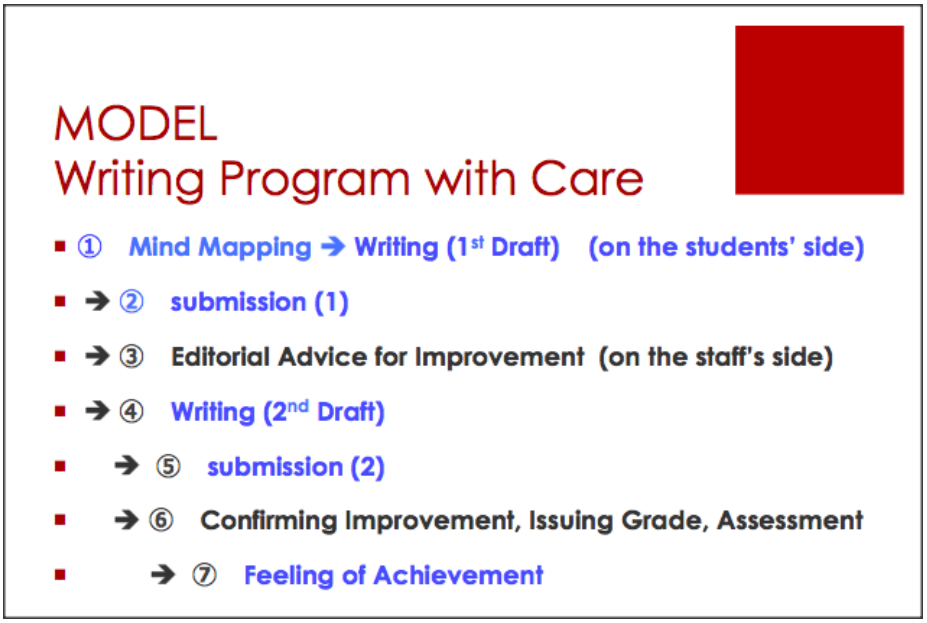

Figure V. Writing Program Design

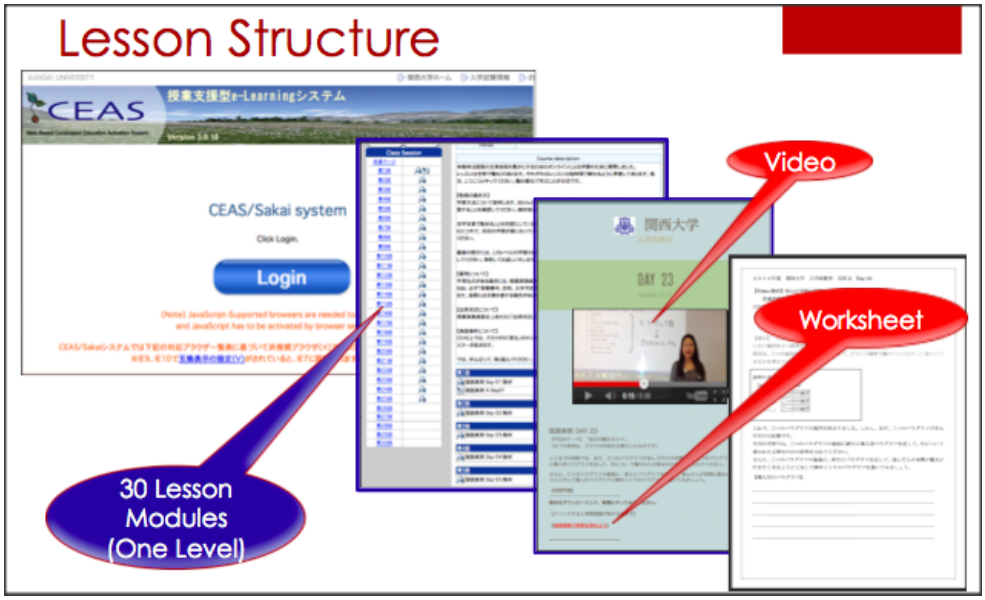

Figure VI. Lesson Model Structure

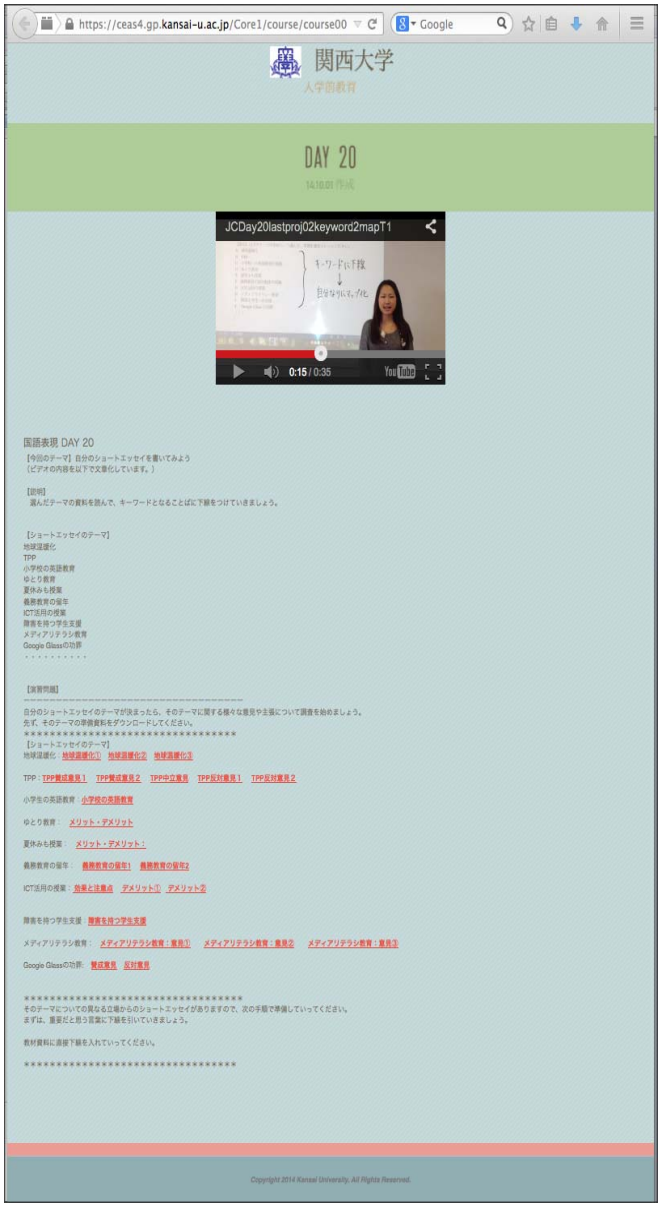

Figure VII. Lesson Module

The program was implemented from November 2014 through March 2015. Over 600 students participated in the language program. At the end of each level, the students turned their writing assignments as the proof of the improvement in learning, one draft version and its improved version at each level. In total, there were accumulatively 3,600 papers to look at during the learning period of five months. Five grading staff members were in charge. Therefore, it was designed that the time allocated for editorial advice would be less than three minutes per paper. In this way, each

grading staff member would look at 80 ~ 100 papers in four hours a day. It would come to 400 ~ 500 papers graded a week.

An optimal solution for this big hurdle was resorted to TurnItIn®, which solved the checking of originality of the students' work,

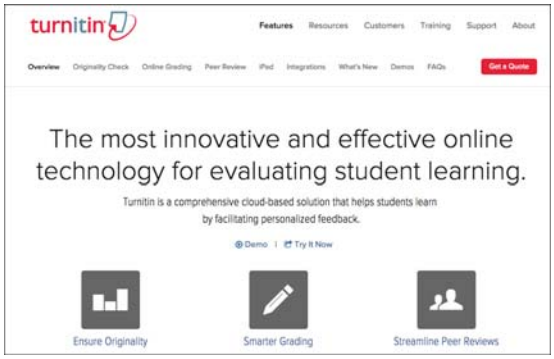

Figure VIII. TurnItIn® Web Site

The papers submitted by the students were time-stamped and the results of originality checking were displayed graphically with color-coded. One of the views contains the detailed results of the originality checking with color-coded sources. (See Figure IX.)

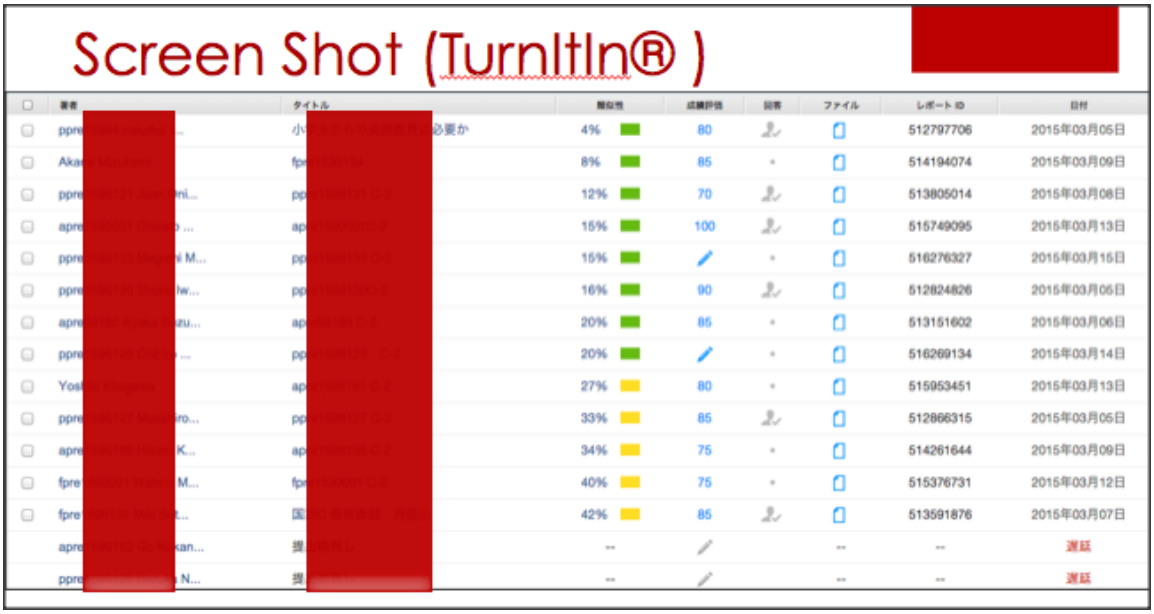

Figure IX. Visualization of Submitted Papers with Originality Checking

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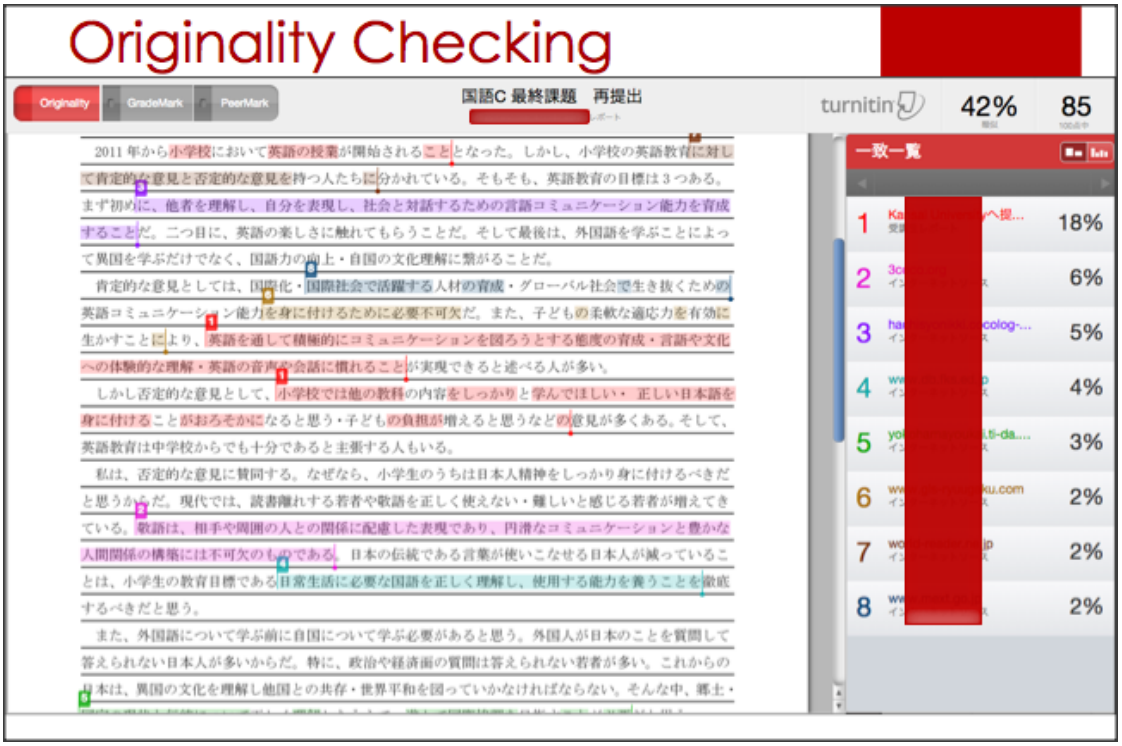

Figure X. Originality Checking Results in Detail

In order to cut down on the tediously time-consuming work for giving editorial comments, a set of graphic icon markers for editorial advice were prepared in advance. The grader can simply drag and drop the intended icon to the student's paragraph instead of writing directly on the paper. Further, in terms of the rubric assessment, grading can be also done in a few seconds. Additional personal comments can be added easily from the archive of comments. Voice annotated comments can be added to each grade marker icon for saving the time for writing.

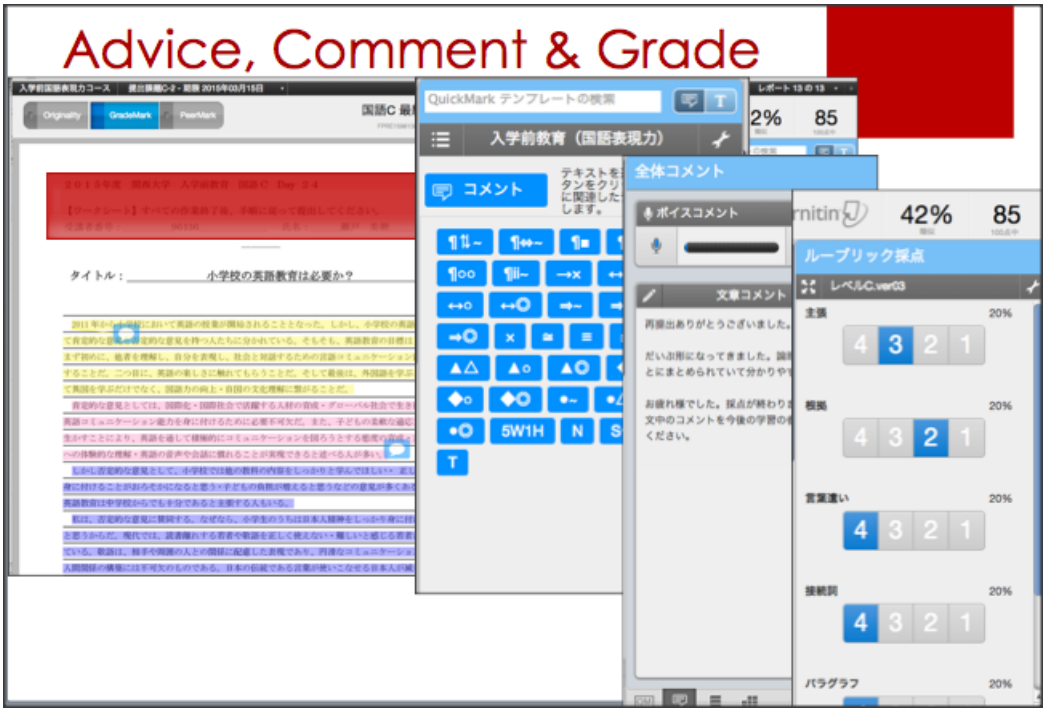

Figure XI. Editorial Advice & Grading Interface

In this way, each paper was graded with the minimum amount of time with the equal amount of grading quality.

In the entire course of development and deployment, the defined problems were all optimally solved and deployed by the team. The success to such operation was due to the employment of the project based learning model in team.

A survey after the program showed positive responses from the participated students due to the unique and innovative nature. All students never experienced such learning opportunities. As the next step, an evaluation of the writing program is underway. It is planned to compare the quality of the self-developed programs with the ones in the previous years from the viewpoint of the self-efficacy in writing.

5.Further Research

So far, TurnItIn® has been only made use of in the area of language arts based on the written text in Japanese. However, it will be applicable to develop the writing skill for the second language or other areas of language arts. For example, one is the grading of reports crafted with rich media and the other is, the robust grading feature of TurnItIn® may make possible a research for the curriculum development as well as the grading in the area of math and science in the process of the formative assessment. Other potential areas for further research will be searched for.

Furthermore, the social aspect of learning such as peer learning will be incorporated in the curriculum. Students' formative assessment records and the artifacts of progress in learning will be managed with a learning e-Portfolio for meta-cognition and for showcasing the student's learning.

6.Conclusion

Kansai University took this project as an extension of active learning activity for a project-based learning involving all the major stakeholders on campus, in which the students, the school staff as well as the faculty worked in the team identified difficulties, defined the problems, worked on them to reach optimal solutions, then put them in manageable projects, and finally brought about successful accomplishment.

This paper demonstrated as a showcase example of a project-based learning involving all major stakeholders at the university. A neat learning environment with mixture of students' active learning, school staff's development, and the faculty development can be established crossing the border of learning of different layers of stakeholders. It is believed that such project-based learning involving various stakeholders on campus will be a creative drive force for the education for the future.

As the entire program for the academic year ended at the end of March, 2015, what's left for the project team is to evaluate the students' progresses and to visualize their accomplishments as a report, which will be planned to be presented in ISGC 2016.

Special Thanks

In order to make this project possible, iParadigms, LLC. England offered Kansai University an opportunity for research in developing a curriculum for the interactive writing program. The distributer for TurnItIn®, iGroup® Japan, made Kansai University the first university to develop writing support program with extensive technical support for the whole academic year of 2014.

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