S. L. Wong et al. (Eds.) (2010). Proceedings of the 18th International Conference on Computers in Education. Putrajaya, Malaysia: Asia-Pacific Society for Computers in Education.

Development and Practical Use of Assignment Report Grading System on Economics courses

Mai OKUDA[a*], & Tsukasa HIRASHIMA[b]
[a]*Graduate School for International Development and Cooperation, Hiroshima University, Japan*
[b]*Graduate School of Engineering, Hiroshima University, Japan*
*mai-o-mai@hiroshima-u.ac.jp

Abstract: It is well known that an assignment report has positive effect for learning. However, a great deal of work is required to evaluate and give feedback to it, because it is difficult to reach agreement on grading standards among setters (instructors), graders (teaching assistants), and participants in the course (students). Therefore, in this research, we have been developing an evaluation support system of the assignment reports that is used by the teaching assistants. The system provides a report format that the students are able to follow to complete the report. The format allows the teaching assistants to insert their comments in a more visualized form that is easier to be understood by the students. This paper shows how the results generated from this correction support system are different from those generated by the conventional ways of report checking.

Keywords: assignment report, marking, collecting support, writing support

Introduction

Instructors realized that they could promote student learning by assigning assignment report. Many educational institutions rely on assignment report. Kumagai et ai.[1] developed a system for students' laboratory assignment report in engineering as a means to check the order of submission and organizing, for both first submissions and resubmissions. They shortened the time for arranging assignment report. Sumiya et al.[2] proposed the lightweight and maneuverability system, including only the arrangement function of assignment report without a large-scale support system such as Moodle or WebCT. They support the five submission measures: e-mail, e-file, text in a browser, URL, and off-line activity. It is very interesting that the systems by Kumagai and Sumiya provide a specialized arrangement function for assignment report and save time in submitting assignment report for both instructors and students. On the other hand, Takano et al.[3] practiced the automatic checking system by an analytic technology for sentence structure over the issue of object orient programming. However, only a few studies so far have analyzed the effects of correcting and returning student assignment report with individual comments in order to improving writing ability in large sections of social science courses.
We are concerned with measures of effective correction of assignment report, improvement in writing ability, and encouragement of continuous interest Okuda et al.[5]. This paper describes the system targeting essay assignment report in economics departments.

1. Practice of correction of assignment report

1.1 A scale of practice and changes in the system

Table 1 shows a number of students and rate of submission of their assignment report. We piloted our research in an International Finance course until 2008 and expanded three courses of International Economics in 2009. The changes in the system were in five stages. The goal was to improve ease of use for students and teaching assistants, as they moved from paper base (Stage I) to G-mail and Excel (Stage V).

Stage I(Paper base): 2001, Stage II(WebCT): 2002～2007(2nd)
Stage III(WebCT- Partition): 2007(3rd),
Stage IV(WebCT and Acrobat): 2007(4th)～2008(b)
Stage V(G-mail and Excel): 2009(c)～

Table 1 : A number of students and rate of submission of their assignment report

	2001	2002	2003	2004	2005	2006	2007
number of students	475	203	347	91	186	216	170
rate of submission	—	—-	—	—	—	80%	79%
	2008(a)	2008(b)	2009(c)	2009(d)	2009(e)		
number of students	169	63	206	63	100		
rate of submission	80%	78%	93%	84%	84%		

This research aimed at various ways from Stage I to Stage V. The conditions we use for our system are (1) students do not bear the expense (2) usable by only web browser and reliable (3) easy to operate.

1.2 The way to set up the problem and the learning effects

The research reports in this study are essays of roughly six hundred characters each. The questions are "Explain/ consider with concrete examples ~" which is a major essay style in schools of social science. To develop students' writing ability, our system provides "enunciation style," adding guidance to assist students in answering the questions. This guidance recognizes factors that students are likely to miss, and it does not restrict students from discussing freely. Figure 2 shows the interface of this system. For instance, the guideline of "Consider an opportunity cost concretely" in 2009(a) is to: (1) explain the definition of an opportunity cost (in roughly 100 characters), (2) show more than three specific examples of an opportunity

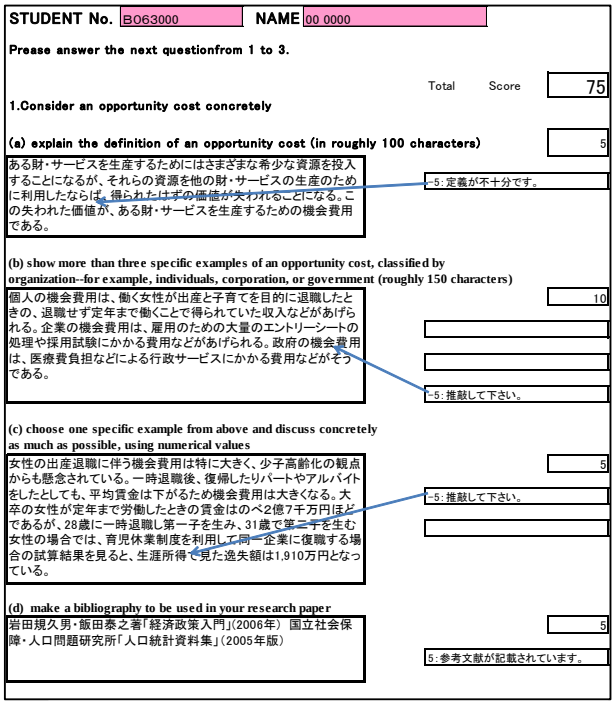

Figure 1 The interface of this report system. (In this system, Students answer in Japanese.)

cost, classified by organization for example,individuals, corporation, or government (roughly 150 characters), and (3) choose one specific example from above and discuss concretely as much as possible, using numerical values, (4) make a bibliography to be used in your research paper. Students prepare elements and fill in answer sheets. In this research several teaching assistants worked on corrections of numerous students' papers. Since we set up the appropriate guideline, the grading standard was shared among an exam setter (instructor), graders (teaching assistants), and participants in the course (students). Figure 1 shows guidelines of the answering sheet and its answer. Figure 2 shows the changes of scoring five groups.

When students were assigned multiple research reports every year, the percentage of 'A' and 'B' grades were increased in proportion to the number of reports. Those receiving 'D' and 'E' grades also improved over time as a result of the correction of their assignment report.

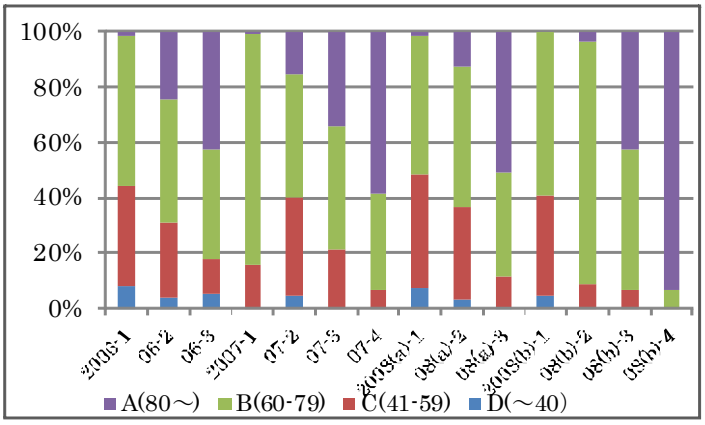

Figure2: The changes of scoring from 2006 to 2008. (A: 100-81%、B:80-61%、C:60-41%、D:40-21%、E:20-0%) from 2006 to2008(b)

2. Conclusion

The purpose of this study was to save time in correcting and submitting assignment report, as well as achieving a shared grading standard. We put this system into practice in an actual course and found it to be successful in a class of roughly two hundred students. We saved labor by using the web for distribution, collection, and return. Since this system achieved consensus in grading and evaluating among instructors, graders (teaching assistants), and participants in the course (students), instructors hardly had to do any grading. By using the guidelines to put students' arguments into shape and in precise sentences, graders were able to grade without little actual knowledge of the subject. By examining ways to set up assignment report and achieve consensus in grading, this study helps students improve their writing ability while saving time in grading.

References

[1] Narimoto, S., Li, X. Deguchi, H., Ohta, T., & Sakai, S. (2007). Analysis of Turnaround Time in On-line Report Correction Support System. *IPSJ MAGAZINE, 48*, 2781-2790 (in Japanese).

[2] Sumiya, T., Nagato, Y., Inagaki, T., & Nakamura, J. (2007). On an assignment management system using WWW and e-mail. *IPSJ SIG Technical Reports, 2007*(101), 109-112 (in Japanese).

[3] Takano, T., Miyakawa, O., & Kohama, T. (2008). Development and Evaluation of a Scoring Support System for Object-Oriented Programming Education. *IPSJ SIG Technical Reports,2008*(103), 41-45 (in Japanese).

[4] Okuda, M., Ishida, M., Ochi, Y., & Hirashima, T.(2008). A Supporting system to write report and its learning effects. *IPSJ SIG Technical Reports, 2008*(128), 75-80 (in Japanese).

[5] Okuda, M., Ishida, M., Hirashima, T., & Ochi, Y.(2009). Designing a writing assistance system by using ICT. *IPSJ Symposium Series, 2009*(6), 109-116.

[6] Ogata, H., Yano, Y., & Wakita, R.(1998). CCML:Exchanging Marked-up Documents in a Networked Writing Classroom. *Computer Assisted Language Learning, 11*(2), 201-214.

[7] Burstein,J., Kukich, K., Wolff, S., Lu, C., Chodorow, M., Braden-Harder, L., & Harris, M.D. (1998). Automated scoring usinga hybrid feature identification technique. *Proceedings of the COLING/ACL*, 206-210.