NEW E-LEARNING COURSE FOR SOCIAL SURVEY
AND INTRODUCTORY STATISTICS

T. Hirose[1], Y. Kanazawa[1], Y. Arakawa[1], M. Kagawa[2], T. Mizuhara[2] and K. Yamaguchi[3]
[1]Center for Statistics and Information, Rikkyo University, Japan
[2]College of Sociology, Rikkyo University, Japan
[3]College of Business, Rikkyo University, Japan
kyamagu@rikkyo.ac.jp

This paper introduces a new e-learning course for principles and methods of social survey and introductory statistics, which are for all students in Rikkyo University. The course consists of the following four subjects; Introduction to the social survey, Social Survey Methodology, Introduction to the Statistics: Descriptive Statistics, Introduction to the Statistics: Statistical Inferences. These subjects are accredited by Japanese Association for Social Researchers as the course for social researchers. Students can learn about survey methods, for example, designs of samples, how to make questionnaires and so on, as well as basic statistics in this course. Usages and linkages to the official statistics in Japan, videos titled statistics for daily life, and interactive learning contents are included in the course.

INTRODUCTION

Rikkyo University launched a new center for statistics education, survey research and data archives, named the Center for Statistics and Information (CSI), in March 2010. In Japan, there are no departments and faculties of Statistics. The demands for statistics education and consultations for data analysis, however, are very strong as like other countries. A survey was conducted by Senuma (2004) to determine what students were expected to study through mathematical studies at universities. This survey was conducted on all the companies listed in the Tokyo Stock Exchange. The results revealed that statistics education, which enables students to use data substantially, is regarded as highly desirable.

Watanabe and Yamaguchi (2006) reported the process of developing the e-learning contents and educational materials for statistics education. Watanabe and Yamaguchi (2006) also pointed out the needs for changing the classical styles for statistics education as follows; numerous statistics teachers in arts departments are of the opinion that students, in general, are hesitant to study the type of statistics that emphasizes mathematical aspects. Course materials utilizing the Internet and other multimedia resources have recently been developed and put to practical use in university education. Multimedia materials emphasize audio and visual components that can be interactively operated and verified. It is hoped that the use of multimedia will positively affect university education; however, no concrete lecture form that will create that positive effect has been standardized in the field of statistics. One of the possible reasons for this failure is that most of the syllabuses that are publicly available are developed in text form and are not based on Internet awareness or the course materials being converted into multimedia formats.

On the other hand, Utts (2004) and the GAISE report of American Statistical Association suggest a new style for statistics education and contents students should learn in higher education. In this paper, we introduce our e-learning course for social survey and basic statistics, which are developed on the according their suggestions.

CONTENTS OF THE STATISTICS AND SOCIAL SURVEY COURSES

CSI provides four subjects in 2010; "Introduction to the Social Survey", "Social Survey Methodology", "Introduction to the Statistics: Descriptive Statistics" and "Introduction to the Statistics: Statistical Inferences". These subjects are accredited by Japanese Association for Social Researchers as the course for social researchers. Students can learn about survey methods, for example, designs of samples, how to make questionnaires and so on, as well as basic statistics in this course. The maximum class size of each subject is two hundreds and expected size of each class may be 150. All students in Rikkyo University can take these subjects.

These four subjects have been accredited by Japanese Association for Social Researchers as the course for social researchers. The association has been established by the following three

academic societies, the Japan Society of Educational Sociology, The Japan Sociological Society and the Behaviormetric Society of Japan. The association has a leadership for the social survey education in Japan. On the other hand, the Japan Statistics Society has special committee of statistics education. We can get many information and ideas on education on statistics from the committee. In a sense, our course is supported by them.

   Figure 1 shows screen shots of lecture titled "Introduction to the Statistics: Descriptive Statistics". In this course, there are many examples of analysis of real data and interviews of statistician from the industry. The course provide many videos which explain role of statistics on our daily life, interactive graph and materials in order to recognize concepts of statistical ideas and the history of statistics in the world and Japan.

Figure 1. Examples of lectures (Using baseball data)

CONCLUSION

   CSI in Rikkyo University started e-learning education on social survey and basic statistics. This course is already accredited by Japanese Association for Social Researchers as the course for social researchers. We have a plan to open all contents. We would like to get public comments on the e-learning course and make them better using such comments.

   Student evaluations are also considered. We will do comparison scores of final examination between e-learning course students and face to face class students.

REFERENCES

Senuma. H. (2004). Kigyou no sansuu and suugaku kyouiku he no kitai- data ni motozuku yosoku to rironteki shikouryoku no kyouchou to shidouhou no kaizen (Companies' expectations for arithmetic and mathematical education–emphasis on predictions based on data and theoretical thinking power, and improvement on teaching methods), *Association of Science Education*, (In Japanese), *28*, 34–42.

Utts, J. (2003). What Educated Citizens Should Know about Statistics and Probability. *American Statistician*, *57*(2), 74-79.

Watanabe, M., & Yamaguchi, K. (2006). On demand statistics courses using new technologies in Japan. In *ICOTS-7 Proceedings*.