

Title	研究活動支援のための論文添削システムの開発
Author(s)	山根, 和也
Citation	
Issue Date	2011-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/9634
Rights	
Description	Supervisor:長谷川忍, 情報科学研究科, 修士

Development of Article Revising System for Supporting Research Activities

Kazuya Yamane(0910068)

School of Information Science,

Japan Advanced Institute of Science and Technology

February 8, 2011

Keywords: Research Activities, Research Knowledge, Article Writing, Knowledge Transfer, Persona Approach

The main topic addressed in this paper is to develop an article revising system for transferring research knowledge to be shared by research laboratory. In our daily research activities, researchers and students, who join in a research group, have to handle various research activities with a great deal of information. The students usually deal with not only formal information such as articles and presentation documents but also informal information which represents processes of research. On the other hand, the research group often has a students' turnover by their graduation. Therefore, it is difficult for the students, especially new students joining in the group, to acquire informal knowledge accumulated in the group. In order to resolve this problem, we take the concept of research knowledge.

The research knowledge is information such as research know-how and how to set a schedule, which facilitates the research activities for the members of the research group. For instance, actual process of trial and error for performing a research activity is one of the informal information. On the other hand, we regard profitable how-to information extracted from such information as the research knowledge. Of course, it is important for the students to accumulate the informal information and to refine the research knowledge so that they can improve productivity of the research activities. However, informal information has the problem of disappearing with the time passage. It is also important for the members to transfer such knowledge to the new students joining in the research group. Then we have developed an article revising system called CommentManager that can extract the research knowledge from the informal information accumulated.

CommentManager is implemented as Web service and strictly designed based on the

persona approach. From the results of persona analysis, most of new students are not masters for writing articles. In addition, they may not understand how to revise their own articles even if it is noticed that the articles do not satisfy some requirements by researcher's comments. CommentManager shows how past old boys and girls, who joined in the research group, solved such comments as the research knowledge. In other word, the system supports new members to learn and understand the know-how information including the trial and error processes of the old boys and girls.

In revising process, many comments are exchanged between the researcher and the students. However, these comments are often distributed by several versions of the article so far. CommentManager manages such comments as the informal information. In addition, CommentManager provides the students with a keyword search function that navigates through comments attached in many versions and with an integrating function that extracts high-frequent or popular comments. These functions exceed a time and distance restriction since they are Web services. In other word, member can use CommentManager from anywhere and anytime. Therefore, it becomes possible for all members of the research group to share the research knowledge.

We have conducted a case study for confirming effectiveness of CommentManager by using past comment data described in the articles that we had written. We first inputted the informal information such as "memo of the trial and error" by using CommentManager. We then analyzed what the research knowledge was extracted from the system. The results of the case study showed potentiality for extracting the research knowledge since there were 27 items of the research knowledge which would support the article revising process of the new students. In addition, we found some future tasks to improve the system.