

Title	遠隔協調学習におけるアノテーション評価機能を用いた協調ノートシステムに関する研究
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Collaborative Note System Using Information Filtering for Effective Acquisition of Knowledge in E-learning

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The purpose of this paper is to develop a WEB based collaborative note system that provides the effective annotations in e-learning. The existing collaborative note systems with annotation function provide all larger quantity shared annotations without selection and resorting so it is difficult for learners to understand the all shared annotations efficiently. With the result it is necessary to select effective annotations from enormous quantity of annotation. For solving this issue, we suggest selecting effective shared knowledge form all shared annotations and providing effective shared annotations only for learns understanding texts efficiently.

The approach of my collaborative system consists of two points. The one point is to realize an evaluation function of annotations. Another point is to support learners for awareness of the effective annotations. The evaluation function of annotation is realized by setting an evaluating step with pro and cons the annotations and providing the effective annotations selected based the evaluations and learners' contribution by system automatically. When learners add an annotation to the document, they should set the type (comment, explanation, advice, others) of the annotation. Then the annotation is indicated for every type to the primary text with which they are associated. The indication of annotations for every type supports learners to aware effective annotations.

The collaborative note system consists of three modes including Personal Mode, Share

Mode and Collaborative Mode. In order to referring annotations conveniently, annotations in all modes are visible “at-a-glance”, horizontally aligned to the primary text with which they are associated, but in a visually distinct space in the margin, and evaluation information is visualized by the color. To support learners to acquire suit knowledge, all annotations indicated for every type can be switched interactively in type. The highlight effect to the underline act to an important sentence has realized as a Fisheye effect for easy reading comprehension in a document.

Personal Mode is intended to support annotations of linear texts and embedded graphics. Annotations are visible “at-a-glance”, horizontally aligned to the primary text with which they are associated, but in a visually distinct space in the margin. Learners add an annotation to the text by selecting a sentence, setting the type and evaluation rate, writing the contents of the annotation. Share Mode supports learners to share others’ annotations of group and evaluate shared annotations. Collaborative Mode provides effective shared annotations by selection and resorting of them from all shared annotations of group. Learners can review text by using the effective shared annotations. In order to comprehend the others’ difficult annotations, Collaborative Mode supports a link to Personal Mode of the learner whose annotation is indicated as an effective shared annotation.

The results of evaluation experiment, which compares with the conventional cooperation note system, show the average rate of correct answer of the group, which learned using my system, is 18.4% higher and the average study time of the group, which is used in learning, is short. For this result we know the selection and resorting of my system is effect to comprehend the text. We know that the learner with the low degree of comprehension in a group was more effectively supported on understanding from the cause that the distribution of a score of the group using this collaborative note system is low and the average rate of correct answer of the group is high.

A result of the questionnaire, which the time to grasp the effective annotations is enough and the annotations indication for every type is effect to comprehend annotations, shows that the annotations indication for every type is effect to support to evaluate annotations. The item of questionnaire on grasping the contents of effective annotations got lower valuation than in the experiment. It can be taken as a result of learners grasping the contents of effective annotations and thinking about them deeply.

As mentioned above, in this evaluation experiment the collaborative note system performed support of deeply understanding annotations to texts and support of the comprehension of the learners with lower perception cooperatively.

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