Collaborative e-Learning Among Teachers Using a Web Database in Special Support Education

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Abstract

We utilized e-Learning using example data from special support education stored in a web database as e-Learning contents. The e-Learning was conducted with teachers from various educational institutes: from primary schools to universities, in addition to special support schools. Through a collective problem solving process we were able to collect in a single web database disparate knowledge from a variety of teachers.

1. Introduction

Beginning in April 2007, Japan will shift from special education to special support education. In special support education, children with special needs (e.g., Learning Disorder, Attention Deficit Hyperactive Disorder, High Functioning Autism) will also be supported in addition to disorders currently supported. It has been reported that 6.3% of children in the classroom have been diagnosed as having special needs that will be supported under the new educational system. Tsujii (2003) have observed that there are many cases where children with special needs are not receiving proper guidance [1]. In addition, Sugiyama (2002) reported that there is a shortage of teachers with enough special knowledge to instruct problem children in a normal classroom [2].

To solve this problem, we have built a web database to share information from various viewpoints among teachers from normal classrooms, special support schools, and researchers from universities [3]. We utilized example case data that consisted of education records, videos, and web bulletin boards stored in the database as e-Learning contents. The aim of the contents was to help teachers improve their guidance skill. In this paper we will report on the collaborative e-Learning that was conducted with teachers from various educational institutes.

2. Web database

Our web database is a collection of multi-media records of guidance for children with special needs. Figure 1 shows the web database. It has the following features:
1) Teachers from various educational institutes in remote locations can input case examples of daily guidance according to the area and specific child they are assigned.
2) Through the web database, teachers from normal classrooms, special support schools, and university researchers can easily share information from diverse viewpoints.
3) The stored data consists of videos of children with problem behaviors and correspondence from the teachers, analysis of the video, and the education records with suggested guidance plans. The education records have a template. Participants can add information to the web.

The videos document the problem behavior of children who belong to a normal class and go to special support school once in a week. We recorded two-minute excerpts of video documenting the problem behaviors along with the title of each problem.
behavior pattern. This included the correspondence of the teacher regarding the children’s problem behavior.

The education records correspond to the problem behavior in the video. These show the following headings: information about the subject student, analysis of the circumstance of the problem behavior, the guidance plans for the children and corresponding problem behavior. A template for the description in the education records was based on ABC analysis.

The participants could contribute to the web bulletin boards to exchange ideas regarding videos and education records. In this system, the contributors choose the opinion category when posting to the bulletin board. This clarifies the contributors’ intention. The records of the contributors are stored as text data linked to the video and education records mentioned above.

Each child has a separate record in the database, and only designated individuals have permission to contribute to the student’s records. This information is stored as metadata for every titled problem behavior. This data can then be shared as the case data in special support education.

3. Practice of collaborative e-Learning

We utilized e-Learning to improve the guidance skills of teachers using case data stored on the web database as learning contents. Participants were from primary schools to universities, and special support schools. We considered a learning cycle ends with the participant creating a guidance plan for the problem behavior in the example case data assigned. Creating a guidance plan in special support education is a complex task as it often does not have one clear solution. However, team collaboration can be an effective means for solving this problem. Considering this is a collaborative system among teachers from various institutes, we created teams with clearly defined roles for each participant. The learning proceeded in the following manner:

1: The problem behavior shown in the example data is analyzed.
2: The guidance plan for the corresponding problem behavior is written. To aid in this step, a template with items to cover in analysis and guidance planning is utilized.
3: Members of the team post guidance plans on the web. This is followed by discussion on web bulletin boards comparing the guidance plans from other team members.
4: Each team then determines and posts a single guidance plan.

5: Researchers knowledgeable in special support education add comments and guidance.
6: A final guidance plan that includes the opinion of specialists is stored in the database.

The guidance knowledge of teachers that manage children’s problem behavior is often not formalized. The system was used to discuss this knowledge and generate a formalized guidance plan. In the process of collaborative learning with a group of experienced teachers, we gathered and stored useful guidance knowledge in the web database in a formalized way. The system became more useful with these guidance plans by enhancing the opinions of experienced teachers from various institutes.

4. Conclusion

We conducted e-Learning with teachers from various educational institutes using a web database we constructed. We were able to store the varied knowledge of multiple teachers into the web database through collaborative problem solving in e-Learning.

Special support education has just started recently in Japan. Moreover, in special support classrooms guidance plans to cope with problem behavior cases are not always clearly defined. Our web database contains examples of these cases where children’s problem behavior was not successfully addressed in special supported classrooms. Teams discussed these cases through collaborative e-Learning and sent feedback to teachers. Teams later followed up the result of their guidance plan. Using this data, learners are able to follow the process and quasi-experience the guidance.

We also observed that collaborative learning is effective in motivating the learners. Using our system, we hope to build a model of collaborative e-Learning among teachers in order to generate effective guidance plans needed in special support education.

5. References