

Abstract

The purpose of this study was to design technology integrated activities for resource room students at the junior high school level and to explore its effect on students' mathematics attitude and achievement. Three seven-graders who were identified as lower achievers in mathematics included in this study.

To develop the technology integrated activities, the researcher analyzed background and learning characteristics of the three cases. Two learning topics, integer addition and subtraction and the transformation of geometry figures, were chosen to be studied. Three kinds of software, PowerPoint, Flash, and GSP, were used to design learning materials. Besides using these learning materials in the classroom, corresponding writing assignments were also designed to enhance student learning. Research data included classroom observations from the video recordings, teaching journals of the teacher, students' performance on writing assignments, students' responds to questionnaires, and student interviews.

The results showed that these technology integrated activities can effectively improve the mathematics attitude of these three mathematics lower achievers in the resource room. Although students still encountered difficulties in learning some of the content, most of the time they did show complements of teacher requests and learning objects. In the topic of integer addition and subtraction, students thought that using PowerPoint to show the outlines helped them understand the big ideas. Using red and blue tai chi to represent positive ones and negative ones, students seemed to get the idea of integer addition and subtraction. This Flash learning material also helped students to practice effectively. However, the students did not perform well on the midterm and were stricken by this result. This may be due to a big difference between the midterm and the ordinary practices in the resource classroom. In the topic of the transformation of geometry figures, the students were observed positive participation and discussions during class time. They experienced difficulties when studying the characteristics and applications of the concept about bisector angles. Even though the researcher revised the teaching activities and explained this concept again, the students still did not get the concept and had lots of difficulties to solve problems which include an application of this concept. The three students indicated that the writing assignments helped them a lot. It was also found that the three students liked these technology integrated activities, and that they expected the teacher to use technology to teach mathematics in the future.

Key words: lower achiever, resource room, technology integrated activity,
mathematics attitude and achievement