Students' Motivation and Teachers' Work Effectiveness in Mathematics Instruction via Digital Books (Poster)

Nayif Awad
Sakhnin College for Teacher Education
rawah@maghard.tzafonet.org.il

Rawaa Hamid
Sakhnin College for Teacher Education
awad_nayif@yahoo.com

מוטיבציה של תלמידים ואפקטיביות העבודה של מורים בהוראת מתמטיקה בעזרת ספרים דיגיטליים (פוסטר)

נאיף עואד
מכללת סכנין להכשרת עובדי הוראה
awad_nayif@yahoo.com

ראועה חאמד
מכללת סכנין להכשרת עובדי הוראה
rawah@maghard.tzafonet.org.il

Abstract

The current study examines the impact of using digital books both on the effectiveness of teachers' work in teaching and on students' motivation and involvement in learning mathematics in Arab elementary schools.

The research questions that guided the current study are:

1. What is the relationship between students' use of digital books and:
   a. Students' motivation?
   b. Students' engagement and involvement in lessons?
   c. Teachers' effectiveness in their work?

2. Does students' use of digital books affect the students':
   a. Motivation to learn?
   b. Engagement in lessons?

3. Is there a difference in motivation between students using/not using digital books?

Two main questionnaires were used to collect data: 1. a teachers' questionnaire based on Shoimer and Gottman (2006) to examine teachers' attitudes towards the use of digital books, the degree/frequency of using them and their effectiveness in instruction; 2. a students' questionnaire based on Smite and Garcia (1987) to examine students' motivation in learning via digital books and to estimate the benefit they could gain from using them. Some items were adapted to fit the current research. Alpha Cronbach for both questionnaires was 0.86 and 0.77, respectively.

The current study involved 100 mathematics teachers aged between 30-50 years and 270 fifth- and sixth-grade students from an Arab elementary school. About half of the students

had experience learning via digital books whereas the second half had no such prior experience.

The data analysis included conducting calculations and using statistics tools in SPSS, for example, calculating averages, standard deviations, Pearson, regression and t-test.

The study findings showed that using digital books contributed to the effectiveness of the teachers' work. In addition, it positively affected students' motivation and increased students' engagement and involvement in lessons. Furthermore, the average level of motivation in the learning process among students who studied using digital books was higher than the average level of motivation in the learning process among students who studied using printed (not digital) books. This research may shed some light on the potential of using digital books to facilitate learning challenging subjects such as mathematics, as well in promoting digital instruction in schools.

Keywords: digital books, mathematics, motivation, work effectiveness.