

Does an English based reading program in science help second language learners acquire science content knowledge?

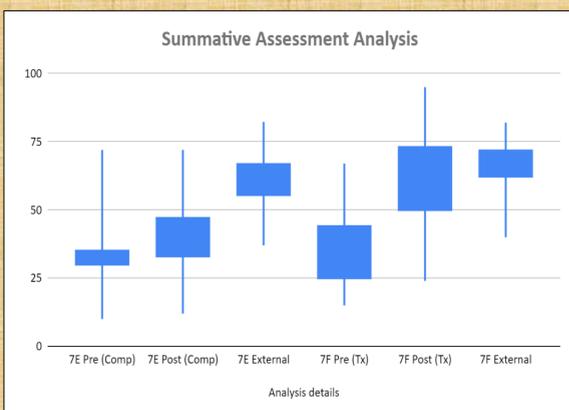
Does an English based reading program in science using informational and one short chapter book:

- improve second language learners' science vocabulary?
- improve second language learners' ability to write in science?
- motivate second language learners to learn science?

Instruments used

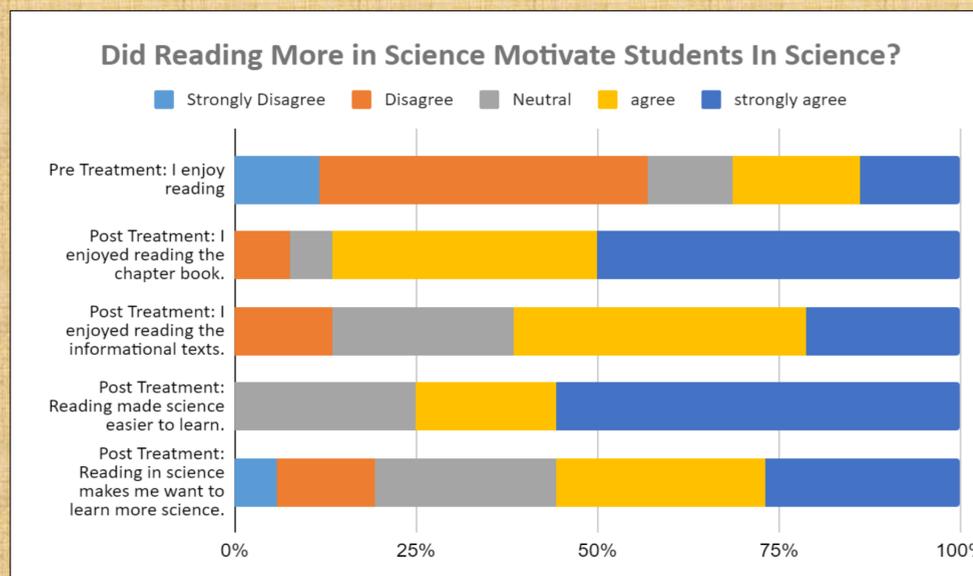
Questions	Data sources		
	1	2	3
Focus Question: In what ways, would using an English based reading program in science help second language learners acquire science content knowledge?	Internal Research Pre/Post-test External Post Test	Formative Assessments	Student Class notebook
Sub-question 1: In what ways, would using an English based reading program in science improve second language learners' scientific vocabulary?	Internal Research Pre/Post-test	Formative Assessment	Student Class notebook
Sub-question 2: In what ways, would using an English based reading program in science improve second language learner's ability to write in science?	Internal Research Pre/Post-test	Formative Assessment	Student Class notebook
Sub-question 3: In what ways, would using an English reading program motivate the students to learn science?	Student interviews	Microsoft Forms Survey	Teacher observation

Data Collection & Analysis Focus question 1



Prior to treatment, this research found that both the treatment, Class 7F, and comparison, 7E, groups had the majority of students below the 50% mark. After the treatment, Class 7F had the majority above 50% and passing whereas Class 7E was still below 50%. This suggests that there were some profound differences in achievement between the two groups.

Data Collection & Analysis Focus question 3



In the pre-treatment survey this research found that over 50% of the students responded with either "Strongly disagree" or "Disagree," suggesting that the students do not enjoy reading. In contrast, by the end of the treatment the most this research found that over 75% of the students responded with "Strongly agree" or "Agree," suggesting that there was a shift in attitude toward reading for enjoyment.

Overview & Sample Size

Over the past 5 years, I have taught science to Arabic students who are second language learners using Western standards. Giving a rough estimate for my students' English fluency level in reading, writing, or use of academic language, less than a quarter are on grade level, half are two years behind, and a quarter are four or more years behind. This does not create a good foundation for students to learn science. That is why the purpose of my research is to find out how incorporating informational texts and chapter books into science improves my students' scientific literacy level, scientific content knowledge, scientific vocabulary, scientific writing, and general attitude towards science. My treatment sample consists of 25 grade 7 male students, and my comparison sample consists of 25 grade 7 male students.

Treatment

A series of mini-lessons within a larger unit that aids my second language learners' literacy and language development. These mini-lessons will be three days a week, last 30 minutes of a one-hour class, and focus on the texts that we are using. The texts consist of informational texts and one short chapter book. The texts will contain the key vocabulary terms and concepts for the unit. The students will extract the necessary information to comprehend the text and science content.

Conclusion/Implications/Findings

In conclusion, this study suggests using an English based reading program in science has a beneficial effect on second language learners. In a comparison of the pre and post assessment values, the treatment group outperformed the comparison group in articulating the science content. In addition to their cognitive and linguistic growth, using an English based reading program with a short fictional science story that related to the Arabic culture engaged and motivated the students to learn science. Moreover, using a short story that related to their (Arabic) culture established a classroom culture of "talking science." The students were relaxed, laughed, and enjoyed science while reading and acquiring relevant vocabulary and content.