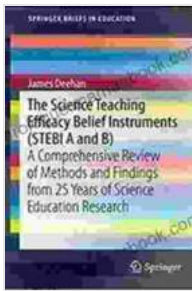


The Science Teaching Efficacy Belief Instruments STEBI and STEBI-B: A Comprehensive Review of the Literature

Science teaching efficacy beliefs are an important factor in determining the quality of science teaching and student learning. Teachers who have high science teaching efficacy beliefs are more likely to be effective in teaching science, and their students are more likely to achieve high levels of academic success (Bandura, 1997).

The Science Teaching Efficacy Belief Instruments (STEBI) and the STEBI-B are two widely used instruments for measuring science teachers' self-efficacy beliefs. The STEBI was developed by Tschannen-Moran and Woolfolk Hoy (2001), and the STEBI-B was developed by Riggs and Enochs (2009). Both instruments are based on the social cognitive theory of self-efficacy (Bandura, 1997), which posits that an individual's self-efficacy beliefs are based on their perceptions of their capabilities to perform a given task.

The STEBI and STEBI-B have been used in a variety of studies to examine the relationship between science teaching efficacy and various outcomes, such as teacher performance, student achievement, and teacher retention. The findings of these studies have consistently shown that science teachers who have high science teaching efficacy beliefs are more likely to be effective in teaching science, and their students are more likely to achieve high levels of academic success.



The Science Teaching Efficacy Belief Instruments (STEBI A and B): A comprehensive review of methods and findings from 25 years of science education research (SpringerBriefs in Education)

★★★★★ 5 out of 5

Language	: English
File size	: 1053 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 98 pages



The STEBI is a 25-item instrument that measures science teachers' self-efficacy beliefs in four domains:

1. **Science teaching outcome expectancy:** Teachers' beliefs about their ability to produce positive outcomes for their students in science.
2. **Science teaching self-efficacy:** Teachers' beliefs about their ability to teach science effectively.
3. **Science teaching personal teaching efficacy:** Teachers' beliefs about their ability to teach science in a way that is personally meaningful and satisfying.
4. **Science teaching collective efficacy:** Teachers' beliefs about their ability to work together with other teachers to improve science teaching and learning.

The STEBI-B is a 12-item instrument that measures science teachers' self-efficacy beliefs in two domains:

1. **Science teaching outcome expectancy:** Teachers' beliefs about their ability to produce positive outcomes for their students in science.
2. **Science teaching self-efficacy:** Teachers' beliefs about their ability to teach science effectively.

Both the STEBI and STEBI-B are reliable and valid measures of science teachers' self-efficacy beliefs. The STEBI has been translated into several languages, and it has been used in a variety of countries around the world. The STEBI-B is a newer instrument, but it has also been shown to be reliable and valid.

A number of studies have examined the relationship between science teaching efficacy and various outcomes, such as teacher performance, student achievement, and teacher retention. The findings of these studies have consistently shown that science teachers who have high science teaching efficacy beliefs are more likely to be effective in teaching science, and their students are more likely to achieve high levels of academic success.

For example, a study by Tschannen-Moran and Woolfolk Hoy (2001) found that science teachers with high science teaching efficacy beliefs were more likely to use effective teaching practices, such as inquiry-based instruction and differentiated instruction. They were also more likely to have positive attitudes towards science teaching and to be satisfied with their teaching jobs.

Another study by Riggs and Enochs (2009) found that science teachers with high science teaching efficacy beliefs were more likely to have high levels of student engagement in their science classrooms. They were also more likely to have students who achieved high levels of academic success in science.

A study by Guskey (2002) found that science teachers with high science teaching efficacy beliefs were more likely to stay in teaching. They were also more likely to be satisfied with their teaching jobs and to have positive attitudes towards teaching.

The findings of the research on science teaching efficacy have important implications for science teacher education and professional development. First, it is clear that science teaching efficacy beliefs are an important factor in determining the quality of science teaching and student learning. Therefore, it is important for science teacher educators and professional developers to find ways to help teachers develop high science teaching efficacy beliefs.

Second, the research on science teaching efficacy suggests that there are a number of things that can be done to help teachers develop high science teaching efficacy beliefs. These things include:

- Providing teachers with opportunities to experience success in teaching science.
- Helping teachers to develop a strong understanding of science content and pedagogy.
- Creating a supportive school culture that values science teaching and learning.

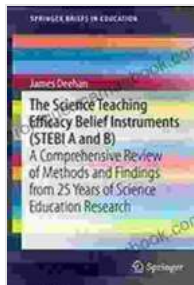
- Providing teachers with opportunities to collaborate with other science teachers.

By taking these steps, science teacher educators and professional developers can help to improve the quality of science teaching and learning for all students.

Science teaching efficacy beliefs are an important factor in determining the quality of science teaching and student learning. The STEBI and STEBI-B are two valid and reliable instruments for measuring science teachers' self-efficacy beliefs. The research on science teaching efficacy has shown that teachers who have high science teaching efficacy beliefs are more likely to be effective in teaching science, and their students are more likely to achieve high levels of academic success. The findings of this research have important implications for science teacher education and professional development. By providing teachers with opportunities to develop high science teaching efficacy beliefs, we can help to improve the quality of science teaching and learning for all students.

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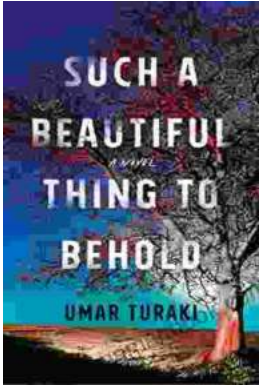
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