

What is the Impact of Teachers' Mindsets on Learning Outcomes?

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Abstract

As a teacher, it is important to consider how to bring about fruitful learning outcomes for learners. One factor that may influence these outcomes is the mindset of the teachers, which refers to their beliefs based on their cultural and social backgrounds and experiences. Mindsets can be categorized into growth and fixed mindsets. This study examines the impact of teachers' mindsets on learning outcomes by reviewing relevant research papers. The findings suggest that teachers who endorse a growth mindset facilitate more beneficial outcomes, both for learning and students' psychological well-being. These results reinforce the importance of fostering growth mindsets in teachers to improve the quality of teaching. Directions for further study are also discussed.

Keywords: teachers' mindset, teachers' belief, learning outcomes

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Mindsets are the beliefs held by an individual about whether a particular human trait or ability can be changed or developed (Dweck, 2006) and an individual's mindset plays a role in perceiving the world around them. Carol Dweck (2006), the founder of the theory of mindsets, explained that there are two types of mindset people may hold: a growth mindset and a fixed mindset. A growth mindset refers to the belief that an individual's intelligence or ability can be malleable and advance through effort, hard work, and dedication. A fixed mindset is the belief that one's intelligence or ability is set in stone and immutable; therefore, people who have a fixed mindset tend to believe that one's intelligence and ability are not significantly improved by effort and

learning.

Research on growth mindsets suggests that people with growth mindsets tend to be more resilient when they encounter failing situations, and continue to develop their learning (Dweck & Yeager, 2019). They also value learning goals, such as improving their abilities and becoming smarter (Dweck, 2000, as cited in Zeng et al., 2019). A stronger attitude towards believing in effort, working harder, and spending more time on tasks are also mentioned as features of people with growth mindsets (Blackwell et al., 2007). However, people who endorse fixed mindsets appear to have a different set of tendencies. People with a fixed mindset may avoid challenges and fail to fulfill their capabilities (Dweck & Yeager, 2019), and they tend to emphasize performance goals, such as appearing intelligent and highlighting demonstrations of their own competencies (Dweck & Leggett, 1988, as cited in Zeng et al., 2019).

Recent discussions posit that mindsets are not necessarily a dichotomy (growth mindsets vs. fixed mindsets). Mercer and Ryan (2010) asserted since most people do not simply belong to one type of mindset, we should not view people as holding either a fixed or a growth mindset (Zarrinabadi & Lou, 2022). Mercer and Ryan (2009) added that Carol Dweck also mentioned that it is possible for an individual to have both mindsets concurrently in different domains; for instance, a person can simultaneously believe that artistic ability is an innate talent and a fixed entity, while also believing that sports abilities can be improved through effort and practice and is not a fixed trait.

Mindsets have been a prominent area of research in education, aimed at investigating how different types of mindsets can influence learners' behaviors, motivation, and academic achievements. Mindsets from the perspective of learners, have been vigorously discussed, while research on the mindsets of teachers has not been as extensively conducted. Through this paper, the authors examine the mindsets of teachers by examining relevant literature, and whether teacher mindsets can have an impact on learning outcomes for learners.

Teachers' Beliefs and Mindsets

What are beliefs? According to Researchers (Eynde et al., 2002; Richardson, 1996, Haddock & Maio, 2008), as cited in Gabillion (2012), the

definition of beliefs can be “psychologically held understandings and assumptions about phenomena or objects of the world that are felt to be true, beliefs have both implicit and explicit aspects, and influence people’s interactions with the world” (Eynde et al., 2002; Richardson, 1996, Haddock & Maio, 2008, as cited in Gabillion, 2012). Beliefs play a crucial role in enabling individuals to understand themselves and the world around them. Furthermore, beliefs are essential in defining goals and guiding behavior in significant ways (White, 1999, as cited in Abdi, 2015).

For teachers, the education that they receive can impact their beliefs. Hall (2005) asserted that teacher education programs provide teachers with professional knowledge and, based on their knowledge, teachers adjust their preexisting beliefs and decide which teaching methodologies to apply. In addition, teachers’ beliefs are the byproducts of understanding personal experiences within their cultural and social environments (Borg, 1999, as cited in Gabillion, 2012). Teachers’ beliefs and their pedagogical knowledge are also closely linked (Beijaard & De Vries, 1997, as cited in Gabillion, 2012). However, teachers’ pedagogical knowledge may be modified according to their beliefs because it is teachers’ beliefs that direct their behaviors in the classroom (Ernest, 1989; Brown & Cooney, 1982, each cited in Gabillion, 2012). Studies on teachers’ beliefs show that what teachers believe influences their decision-making about teaching practices and affects the events that occur within the classroom (Gabillion, 2012).

Just like the rest of the populace, teachers may hold preexisting beliefs about human intelligence and attributes. However, understanding teachers’ mindsets is important due to their relationship with students in learning settings. Similar to research on teachers’ beliefs, studies on teacher mindsets have shown that what teachers apply in class is closely related to their experiences, training, and beliefs as well (Shim et al., 2013).

Teachers with Growth Mindsets and Fixed Mindsets

Teachers who believe one’s intelligence and ability can grow through one’s effort and hard work are more likely to endorse growth mindsets. Teachers’ mindsets of human capabilities significantly affect their behaviors and engagement with students (Hosseini & Khademi, 2021). Teachers with

growth mindsets support their students to put in more effort because those teachers generally believe that students can improve their abilities. Teachers with growth mindsets try to understand each student's unique qualities, offer them emotional encouragement, and assist them in identifying appropriate learning techniques, and those teachers also tend to promote mastery orientation in class to motivate their students (Rissanen et al., 2018). The study conducted by Hosseini and Khademi (2021) demonstrated teachers with growth mindsets considered students' emotions, learning strategies, and their situations to understand their students' behavior and learning progress. Furthermore, these teachers did not place much emphasis on their students' social status when choosing to interact with them. In their study, the teachers with growth mindsets took care of students' individual differences and needs, and these teachers tried to encourage students to view learning failures as part of the learning process. Also, these teachers helped their students find better ways of learning. In conversations, teachers who endorse growth mindsets rarely described their students with their personal traits, and the scores of students was not the only assessment for these teachers to understand their students' learning process. Another interesting finding in their study was that teachers with growth mindsets tended to prioritize the enjoyment of class, and help students be mentally present during class. Generally, these teachers thought of themselves as responsible for teaching and learning for the improvement of their students. Moreover, teachers' feedback shows different tendencies in teachers with growth mindsets. Their feedback is more process-oriented and focused on students' efforts or strategies rather than on personal traits (De Kraker-Pauw et al., 2017).

Teachers who believe one's intelligence or ability are innate and not malleable endorse fixed mindsets. Research on teachers with fixed mindsets explains that these teachers consider students' talents and personal traits, in order to understand the behavior of their students (Chiu, Hong & Dweck, 1997). Teachers with fixed mindsets tend to promote their students' personal intelligence or ability more often than teachers with growth mindsets (Jonsson & Beach, 2012, as cited in Hosseini and Khademi 2021) however, encouraging such personal traits negatively affect students' learning, motivation, perseverance, and effort (Mueller & Dweck, 1998, as cited in Hosseini and

Khademi 2021). According to the study by Hosseini and Khademi (2021), teachers with fixed mindsets believe that student achievements and failures can be linked to inherent qualities such as intelligence and talent, therefore student effort was less valued. Furthermore, teachers in the study with fixed mindsets tended to frequently utilize standardized approaches for teaching, which relied more on students' ability and assessment. These teachers also thought that the low ability of the students was related to their lack of motivation. When students fail in their learning, these teachers attribute their students' failures to the students' limited abilities or intelligence (Ratan, Good & Dweck, 2012, as cited in Hosseini and Khademi 2021). Teachers who have fixed mindsets tend to believe that they have less responsibility for the learning practices of their students (Patterson et al., 2016) and pay less attention to personal traits. Feedback to students from teachers with fixed mindsets is more directed to students' traits, abilities, and results (De Kraker-Pauw et al., 2017).

Teachers' Mindsets and Learning Outcomes

Unfortunately, there are currently not enough studies on correlations between teachers' mindsets and learning outcomes. However, the available research includes such as the following outcomes. One study demonstrated that the teachers' growth mindset encouraged students' academic outcomes in science class (Schmidt et al., 2015). In the study, the students showed improvement in their performance, however, the students performed better when the students were taught by teachers who endorsed growth mindsets. Meanwhile, the study revealed that the students taught by teachers having fixed mindsets did not show any improvement in their performance in the same subject. Kärkkäinen et al. (2010) found that children's views of their own potential for improvement, both in their interactions with others and within themselves, tended to be related to the perceptions of their teachers. Zhang et al. (2017) explained that numerous studies have revealed teachers' mindsets can be both a causal factor as well as a mediator for students' achievement. However, they added that more studies have suggested teachers' mindsets play more of a role of a cause than a mediator. Furthermore, the researchers emphasized that there are other studies showing no association between

teachers' mindsets and students' achievement (Zhang et al., 2017). Another study conducted in Germany (Voss et al., 2013) compared teachers' beliefs and learning outcomes in mathematics. The study distinguished mathematics teachers' beliefs as transmissive beliefs or constructivist beliefs. Teachers who held transmissive beliefs believed that mathematical teaching and learning is a one- directional process from teachers to students, and such teachers also tended to view their students as passive learners. However, teachers who had constructivist beliefs showed more engagement with students and those teachers saw their students as active learners. Their longitudinal study revealed that mathematics teachers' beliefs have an impact on their instructional practice and their students' learning outcomes. The result of the study showed that transmissive beliefs of teachers had negative consequences on the quality of teaching and the academic performance of students. Consequently, teachers with constructivist beliefs were more positively associated with better outcomes in teaching quality and students' achievement (Voss et al., 2013). Porter et al. (2022) conducted a randomized controlled study that instilled growth-mindsets in U.S adolescents. In that study, a teacher-delivered growth-mindset intervention was implemented with the participants, resulting in an increase of 2.81 grade percentage points. This study provides evidence that growth-mindset interventions can lead to positive outcomes when used by teachers. In other words, the use of growth-mindset interventions by teachers can result in improvements (Porter et al., 2022). The study by LaCrosse et al. (2020) added more evidence of the importance in teachers' beliefs. The study revealed that the beliefs of STEM professors (Science, Technology, Engineering and Mathematics) about the malleability of students' intelligence have a significant impact on their students' psychological experiences in the classroom, their expected academic performance, and their interest in taking the professor's course. Students in the study showed a more negative psychological experience, decreased performance, and lower course interest when the subjects were taught by STEM professors who held more fixed mindset beliefs. This result resonated more with female students who had to deal with negative stereotypes that question their abilities in STEM. However, another study found that teachers' mindsets did not result in sustained academic improvement among students (Donohoe et al., 2012).

Conclusions

What we believe to be true formulates our attitudes and opinions (Schwitzgebel, 2010), and beliefs we hold are informed by a variety of factors, including personal experiences, cultural influences, and socialization. Each teacher has a different background of culture, educational experience, and socialization forming their beliefs from which their mindsets are derived. As previously discussed, teachers' mindsets can be simultaneously growth oriented and fixed oriented. However, based on the above research, it appears that teachers with growth mindsets are more conducive to achieving better outcomes, not just in terms of learning outcomes, but also in terms of learners' psychological experiences. While growth mindsets may be more advantageous for both teachers and learners, not all teachers are willing to embrace this approach.

There is an interesting anecdote from the American cognitive scientist, Scott Barry Kaufman. This anecdote may be particularly relevant to teachers.

Scott Barry Kaufman, the author of *Ungifted: Intelligence redefined*, once told this story about his childhood. He was perceived as a child with a low IQ, and his teacher saw him only through this lens of his low IQ, expecting little from him. He told his teacher that he wanted to be a psychologist in the future, and his teacher dismissed him with a hurtful comment. Later, he did become a psychologist and cognitive scientist. One day, he accidentally encountered his old teacher, and Professor Kaufman was able to strike up a short conversation with him, however, he did not reveal his true feelings about what the teacher had said to him in the past. Professor Kaufman only told him "You changed my life." Ironically, the teacher told Prof. Kaufman that he was scheduled to tutor a student with a very low IQ, and expressed his frustration with the student. "Maybe you could just keep looking deeper beyond the IQ, into maybe think[ing] about him in a bit of a broader way, where you look at the totality of him, not a particular slice of him when you're making that kind of judgment call." (Vedantam, 2022)

Presumably, no teachers would want to encounter their old student in a situation similar to Kaufman's teacher. However, in real-world situations it might be hard for a teacher to understand each student at a deeper level. Prof. Kaufman's old teacher probably taught him according to what he had believed

and how he had been trained at that time. It seems difficult to change the beliefs of teachers after they have been further shaped by experiences (Hall, 2005).

These days, educational environments are undergoing rapid changes in many ways, such as the integration of technology, the adoption of new teaching methods, the growing number of interdisciplinary studies, and the increasing diversity of students. As a result, teachers' beliefs and practices may need to keep pace with the changing world in order to best serve their students. Continuing education and training programs can provide new perspectives and insights to teachers with deeply ingrained beliefs and can help those who feel stuck in their ways to break out of old habits and adopt new approaches to teaching. Further research should delve deeper into how teachers' mindsets can be improved through continuing education and training programs.

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