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PROMOTING A GROWTH MINDSET IN HIGH SCHOOL EDUCATION IN RI-BHOI DISTRICT OF MEGHALAYA: THEORY AND PRACTICE

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Abstract

The present study investigates how effective a growth mindset intervention designed for teachers can be within secondary schools in the Ri-Bhoi District of Meghalaya. Building on Dweck's (2006) theory of implicit beliefs about intelligence, it examines whether shifts in teachers' mindsets influence how students perceive learning, ability, and personal development.

The study employed a one-group pretest-posttest design with 15 teachers and 147 students participating. Responses from before and after the program were compared. Basic statistical tools were used, including paired-sample t-tests and Cohen's d. Student scores were higher after the program. The mean rose from 19.44 to 24.94 ($t = -6.695$, $p < 0.05$, $d = 0.75$). This shows a clear positive shift. Teachers followed the same pattern. Their average score increased from 18.60 to 25.20 ($t = -7.571$, $p < 0.05$, $d = 1.20$). The change was stronger in this group. Score variation also dropped a little in both groups, which may mean responses became more consistent after the program.

The results point in one clear direction. What teachers believe about ability seems to matter. When teachers begin to see ability as something that can grow, students may start thinking in much the same way. Earlier studies have reported similar patterns (Canning et al., 2019; Muenks et al., 2020). This may also mean that working directly with teachers is one practical way to build a more growth-oriented classroom culture.

Keywords: *Growth mindset, teacher beliefs, student motivation, implicit theories of intelligence, secondary education, educational intervention, Meghalaya*

1. Introduction

Schools are expected to do more now than help students get good marks. They are also expected to help young people deal with change, handle setbacks, and keep moving forward. Because of that, researchers have paid more attention to the psychological side of learning. Students do not all learn in the same way, and they do not all respond to school in the same way either. One idea that comes up often here is mindset. In simple terms, it refers to what people believe about intelligence (Carol S. Dweck, 2006; Visible Learning, 2009). Those beliefs matter because they shape how students think about learning and what they do when learning becomes difficult.

Mindset is usually talked about in two ways. One is fixed and the other is growth. A fixed mindset is the belief that intelligence is mostly something a person is born with. A growth mindset takes a different view. It suggests that ability can improve over time through effort, persistence, and the use of suitable strategies (Dweck & Leggett, 1988). This matters in ordinary classroom life. It can shape how students react when they struggle, make mistakes, or get feedback (Hong et al., 1999). Students with more growth-oriented beliefs often stay with tasks longer, manage their learning better, and usually perform better in school too (Blackwell et al., 2007; Yeager & Dweck, 2012).

This idea also connects with achievement motivation. Students with a growth mindset are often more interested in learning properly than in simply scoring well. That is the basic point behind achievement goal theory (Elliot & Church, 1997; Burnette et al., 2013). They also tend to use better learning strategies and are more likely to keep going when work becomes difficult (Zimmerman,

2000). Students with fixed beliefs often show the opposite pattern. They may avoid harder tasks, give up sooner, and struggle more over time (Claro & Loeb, 2019).

Teachers matter here too. What teachers believe about intelligence can shape how they teach, what they expect from students, and how they respond in class. Small things in everyday classroom life can affect how students feel about learning (Muenks et al., 2020). When effort, progress, and improvement are encouraged, students are more likely to develop growth-oriented beliefs (Patrick et al., 2011). When natural ability is treated as the main thing that matters, fixed beliefs can become stronger instead (Rattan et al., 2012). Teacher beliefs have also been linked to student outcomes and differences in achievement (Canning et al., 2019).

There is still not much work on growth mindset in India, especially in places like Meghalaya. That matters because schools are shaped by context. Language, region, and social background all make a difference. What works in one place may not work in the same way somewhere else (Kingdon, 2020; NITI Aayog, 2022).

This study was done with that in mind. It looks at a teacher-focused growth mindset intervention in secondary schools in the Ri-Bhoi district of Meghalaya. The intervention starts with teachers, not students. The idea is simple. If teachers begin to think differently about ability, classroom practice may begin to shift too, and students may start to think differently as a result.

The study asks whether this intervention helps strengthen growth mindset among both teachers and students. It also looks at whether responses become more consistent after the program and whether this kind of approach makes sense in this educational setting.

2. Theoretical Framework

At the center of this study is a fairly simple idea. What people believe about intelligence can shape what happens in learning. That idea is not new, but it helps explain a lot of what goes on in classrooms. To make sense of it, this study draws on a few ideas from psychology and education that help explain why beliefs matter, how they affect motivation, and why teachers can have such a strong influence on the way students learn.

Here we begin with Carol Dweck's work on intelligence beliefs (2006). According to her, some people think intelligence is mostly fixed. While others think it can grow. Here, Dweck refers to these as entity and incremental beliefs. To put in simpler terms, one view treats ability as something fairly stable, while the other sees it as something that can change through effort and learning (Dweck & Leggett, 1988). This is applicable in school more than it might seem. It can shape how students respond when work becomes difficult. Students who lean more toward growth-oriented beliefs are often more willing to keep trying, recover after setbacks, and change the way they work when something is not going well (Blackwell et al., 2007; Yeager & Dweck, 2012).

This connects quite easily with achievement motivation. What students believe about ability often shapes the kinds of goals they work toward. Usually, students with a growth mindset care more about learning properly than about simply proving they are capable. Often, they are more concerned with improving, understanding, and building skill over time (Elliot & Church, 1997). Here, the students also tend to manage their own learning more actively. It enables them to involve setting goals, checking progress, and staying with difficult work for longer (Zimmerman, 2000). Here we notice that students with more fixed beliefs often respond differently. It enables them to more likely to focus on performance, avoid harder tasks, and withdraw when failure feels possible (Burnette et al., 2013).

We cannot forget that teachers matter in this process too. Here, Bandura's social cognitive theory (1997) helps make sense of that. A good deal of learning happens through observation, interaction, and everyday social experience. Teachers are central to all these three elements in the classrooms. In fact, what they believe about intelligence can shape how they teach, what they expect, and how they respond to students. These may seem like small things, but they can make a real difference. Teachers who see ability as something that can grow are often more likely to encourage effort, respond with useful feedback, and create a classroom where students feel more supported. Over time, students may begin to absorb similar beliefs themselves (Muenks et al., 2020).

Research has shown this in practice as well. Teachers who see intelligence as fixed may, often without meaning to, reinforce the idea that ability is something students either have or do not have. Teachers with more growth-oriented beliefs are more likely to encourage persistence, resilience, and motivation in their students (Rattan et al., 2012). Their beliefs have also been linked to student engagement and academic performance, especially in secondary school settings (Canning et al., 2019).

Taken together, these ideas shape the basic logic of this study. The assumption is fairly simple. If teachers begin to think differently about ability, that may start to change what happens in the

classroom. And if classroom experiences begin to change, students may start thinking differently too. Change, in this sense, may begin with teachers and then gradually influence how students learn, respond, and make sense of their own ability.

3. Methodology

3.1 Research Design

This study used a quantitative method. The purpose was to see whether the teacher-focused growth mindset program made any real difference. The same group was studied twice. Responses were collected once before the program and once again after it were completed. This made it possible to compare both sets of scores and see whether any change had happened over time (Creswell, 2014).

3.2 Sample and Sampling Technique

The study involved 147 students and 15 teachers from high schools in the Ri-Bhoi district of Meghalaya. Participants were chosen through random sampling. This was done to reduce bias and avoid selecting only one type of participant. Teachers took part directly in the program. Students were not trained on their own, but they were exposed to the same ideas through classroom teaching and through regular contact with teachers who had completed the training.

3.3 Instruments

Data were collected using Growth Mindset Scales based on Dweck's work (2006). These scales were used to understand how participants thought about intelligence, especially whether they saw it as fixed or as something that could change. The items focused on beliefs about intelligence and personality. Responses were recorded on a Likert-type scale. Higher scores suggested stronger growth-oriented beliefs. These scales have been used in earlier studies and are commonly used in mindset research (Blackwell et al., 2007; Yeager & Dweck, 2012).

3.4 Procedure

The study moved in a few simple stages. It started with a pre-test for both teachers and students. This gave a starting point before the program began. After that, the intervention phase was carried out. Teachers received structured training on growth mindset ideas. The sessions focused on three basic points: intelligence can change, effort matters, and feedback should support improvement. Once the training was completed, teachers used these ideas in their classrooms for a set period of time. When that stage ended, the same tool was used again as a post-test to check whether scores had changed in either group.

3.5 Data Analysis

The data were examined using simple statistical methods. First, descriptive statistics were used to compare scores from before and after the intervention. Mean and standard deviation were used to look at changes in average scores and in the spread of responses. After that, a paired-sample t-test was used to check whether the differences were statistically meaningful (Field, 2018). Cohen's d was also calculated to estimate the size of the change and to give a clearer idea of how much practical difference the program made.

4. Results and Analysis

The responses from 147 students and 15 teachers were checked to see if the growth mindset intervention made any noticeable difference. The first step was simple. Scores from before and after the intervention were compared using the mean and standard deviation. This gave a basic sense of what changed. After that, paired-sample t-tests were used to check whether those changes were large enough to count as statistically meaningful. The results are shown below in tables and figures, followed by analysis and interpretation.

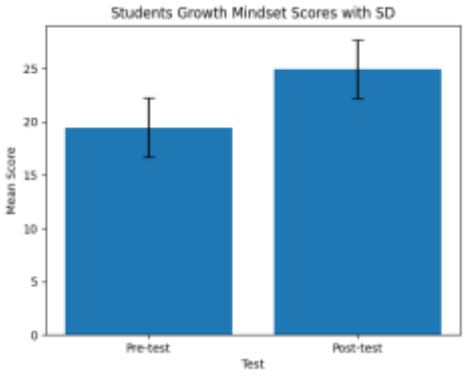
4.1 Growth Mindset of Students

Student scores were looked at first by comparing results from before and after the intervention.

Table 1 Descriptive Statistics of Students' Growth Mindset Scores (Pre-test and Post-test)

Test	N	Mean	Std. Deviation
Pre-test	147	19.44	2.791
Post-test	147	24.94	2.733

Figure 1 *Mean Pre-test and Post-test Scores of Students with Standard Deviation*



Analysis

Student scores were higher after the intervention. The mean moved from 19.44 in the pre-test to 24.94 in the post-test. This suggests that, after the program, students were more likely to see intelligence as something that can change and improve.

There was also a small change in how spread out the scores were. Standard deviation dropped slightly, from 2.791 to 2.733. This suggests that student responses became a little more alike after the intervention. The shift was not limited to only a few students. It appeared more widely across the group.

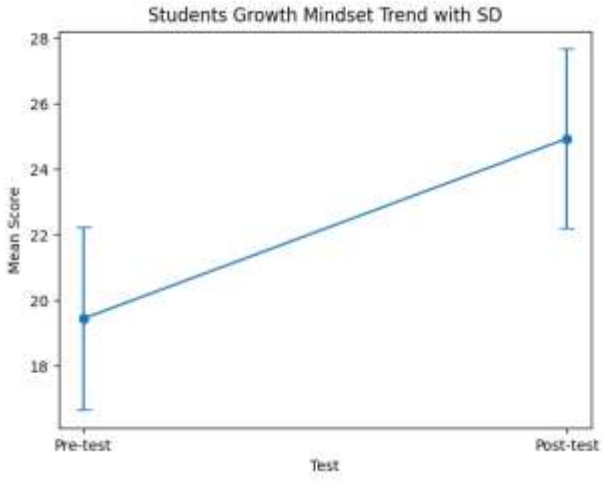
4.2 Statistical Significance of Students' Growth Mindset

A paired-sample t-test was used next to check whether the change in student scores was statistically meaningful.

Table 2 Paired Sample t-test for Students' Growth Mindset Scores

Variable	N	Mean Difference	t-value	df
Pre vs Post	147	5.50	-6.695	146

Figure 2 ***Growth Mindset Improvement Trend among Students (Mean ± SD)***



Analysis

The test showed a statistically significant difference between pre-test and post-test scores ($t = -6.695$, $p < 0.05$). This means the rise in scores was unlikely to be random and was more likely connected to the intervention.

The mean difference was 5.50 points, which suggests a clear upward shift. Figure 2 shows the same pattern. Post-test scores were higher than pre-test scores, which supports the same conclusion.

4.3 Effect Size of the Intervention (Students)

Effect size was also calculated to get a better sense of how meaningful this change was in practical terms.

Table 3 Effect Size of Growth Mindset Intervention (Students)

Measure	Value
Cohen's d	0.75 (Approx.)

Analysis

For students, the effect size (Cohen's d = 0.75) suggests a moderate to strong effect. In simple terms, the change was not only statistically significant but also large enough to matter in practice.

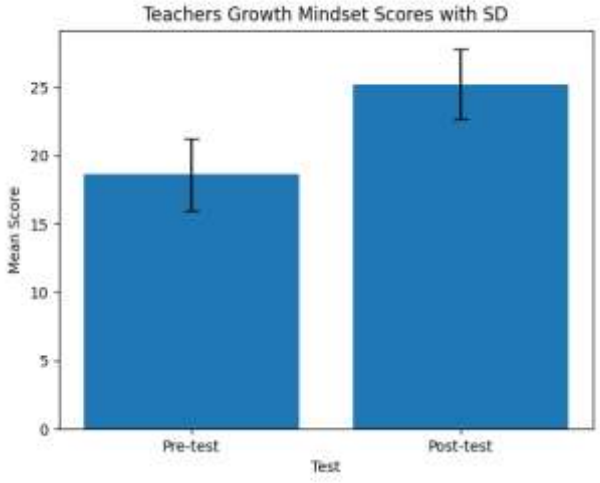
4.4 Growth Mindset of Teachers

The same comparison was then made for teachers.

Table 4 Descriptive Statistics of Teachers' Growth Mindset Scores (Pre-test and Post-test)

Test	N	Mean	Std. Deviation
Pre-test	15	18.60	2.633
Post-test	15	25.20	2.573

Figure 3 *Mean Pre-test and Post-test Scores of Teachers with Standard Deviation*



Analysis

Teacher scores also increased after the intervention. The mean rose from 18.60 in the pre-test to 25.20 in the post-test. This points to a clear shift and suggests that teachers were more likely, after the program, to see intelligence and ability as something that can develop.

The spread of scores became slightly smaller here too. Standard deviation dropped from 2.633 to 2.573. This suggests that teacher responses became a little more alike after the intervention and that teachers may have developed a more shared view of growth mindset ideas.

4.5 Statistical Significance of Teachers' Growth Mindset

A paired-sample t-test was used again to check whether the change in teacher scores was statistically meaningful.

Table 5 Paired Sample t-test for Teachers' Growth Mindset Scores

Variable	N	Mean Difference	t-value	df	p-value
Pre vs Post	15	6.60	-7.571	14	0.000

Analysis

The result again showed a statistically significant difference between pre-test and post-test scores ($t = -7.571$, $p < 0.05$). This suggests that the change in teacher scores was unlikely to be due to chance and was more likely linked to the intervention.

The size of the t-value also suggests that the shift was fairly strong and not just a small change in responses.

4.6 Effect Size of the Intervention (Teachers)

Effect size was calculated again for teachers to estimate how meaningful the change was in practical terms.

Table 6 Effect Size of Growth Mindset Intervention (Teachers)

Measure	Value
Cohen's d	1.20 (Approx.)

Analysis

For teachers, the effect size (Cohen's d = 1.20) was large. This suggests that the intervention had a strong practical effect and that the shift in teacher beliefs was substantial.

4.7 Overall Interpretation

Looking across the results, the pattern is fairly clear. Scores increased in both groups after the intervention. This suggests improvement among both students and teachers. The small drop in standard deviation in both groups also suggests that responses became a little more consistent after the intervention. The t-test results show that these changes were statistically reliable, while the effect sizes suggest that they also mattered in practical terms.

One point stands out. Teachers showed a strong shift, and this may help explain the change seen among students as well. This supports the view that teachers can play an important role in shaping how students think about learning and suggests that teacher-focused interventions may influence classroom learning in broader ways.

5. Discussion

This study asked a fairly direct question: if teachers begin to think differently about ability, does anything begin to change for students as well? The results suggest that something did change. Scores improved in both groups after the intervention. Students showed movement, and teachers did too. Read together, the results suggest that the intervention had a noticeable effect and that the overall pattern fits what earlier work on mindset has been pointing to.

What matters first here is the student results. We notice that their scores were higher after the intervention, which suggests that students were more likely to see intelligence as something that can change rather than something fixed. And they seemed more willing to connect learning with effort, practice, and persistence. Here, Dweck's (2006) argument that students respond differently when they believe ability can develop becomes more relevant. This finding is consistent with earlier research connecting growth mindset to greater motivation, resilience, and engagement in learning (Blackwell et al., 2007; Yeager & Dweck, 2012).

Another subtle trend emerged in the student results that may be easy to overlook but remains meaningful. The variation in scores became slightly smaller after the intervention, suggesting that improvement was shared across students rather than concentrated among only a few. The change seems to have been shared more broadly across the group. In practical terms, that matters. It suggests the intervention may have reached students more evenly, rather than helping only those who were already more likely to respond well.

The teacher results were just as important, and in some ways more revealing. Teacher scores increased clearly after the intervention, and the effect size was strong. That points to more than a small change in responses. It suggests that the intervention influenced how teachers thought about intelligence, learning, and student ability in a more meaningful way. That matters because what teachers believe often shapes what happens in class. It can shape expectations, feedback, and the way students experience learning from day to day (Muenks et al., 2020).

There was also a small drop in variation across teacher responses. This suggests that teachers may have left the intervention with a more similar way of thinking about learning and ability. That kind of consistency matters in school settings. When teachers respond to effort, struggle, and progress in similar ways, students are more likely to experience a more stable learning environment. Earlier work has made similar arguments, especially in relation to student motivation and achievement (Canning et al., 2019).

These findings also make sense from a social learning point of view. Students do not learn only from what teachers explain. They also notice what teachers encourage, how they respond to mistakes, and what kinds of effort are valued in class. In that sense, teachers model beliefs as much as they teach content. If teachers begin to respond differently to ability and effort, students are likely to notice. The change seen in both groups may reflect that kind of process, where the shift begins with teachers and gradually reaches students.

The effect sizes support that reading too. The change among students was meaningful, but the change among teachers was stronger. That is not surprising, since teachers were the ones who received the intervention directly. Still, it matters. It suggests that teacher-focused work may influence more than individual belief. It may also shape classroom practice and, over time, the wider learning environment.

There are limits to keep in mind. This study used a one-group pre-test and post-test design, so the findings should be read with some caution. The study shows change, but it cannot fully rule out every outside influence. It was also carried out in one specific regional setting. Because of that, the same pattern may not appear in exactly the same way elsewhere.

Implications

A few things seem worth taking from this study. The first is fairly plain. Growth mindset is not only something students need to hear about. Teachers need time with these ideas too. If schools expect teachers to encourage this kind of thinking, then teachers also need room to think through what they themselves believe about ability, effort, and learning. Without that, change in the classroom may not go very far.

There is another point here too. Working with teachers may shape more than teachers alone. What teachers believe often comes through in small classroom moments. It shows up in how they respond when students struggle, what they say after mistakes, and what they choose to praise. Students notice these things, even when they seem minor. Over time, those moments can start shaping how students think about learning as well.

One more point matters. Consistency matters. Students are more likely to respond to growth-oriented ideas when they meet them often. Not only in lessons, but in the ordinary feel of classroom life. When effort, progress, and useful feedback become part of what feels normal in class, students are more likely to stay with the work.

6. Conclusion

This study started with a simple question. If teachers begin to think differently about ability, do students begin to change too? The results suggest yes. Scores went up after the intervention in both groups. Teachers changed. Students changed too. The pattern was broadly the same across both.

The teacher results stand out most. That is where the stronger shift appeared. This matters because teachers shape much of what students experience in class each day. What teachers believe can affect how they respond to effort, how they talk about ability, and what students begin to believe about their own learning.

The larger point is simple enough. When teachers begin to approach learning differently, students often respond to that change. In that sense, working with teachers may be one useful way to strengthen classroom learning in secondary schools.

It does not solve everything. Still, the study suggests that mindset-based work can help, especially in places where classroom life is shaped by local realities, as in Meghalaya.

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