

The Growth Mindset of Undergraduate Students Studying Education Programs

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Abstract. Growth Mindset is one of the determinants of a person's success in study and career. This is because people who have a growth mindset have perseverance, like challenges, and believe that their abilities will improve if they practice persistently. This quantitative study explores the growth mindset of undergraduate students studying education programs with a descriptive analysis and compares the growth mindset of students from private and public universities with independent sample t-test analysis. There were 452 undergraduate students from various universities in South Sulawesi participating: 215 students from private universities and 237 students from public universities. The results showed that the growth mindset of undergraduate students in education programs was high, both in private and public universities. However, there is a difference between the two, where the growth mindset of undergraduate students in public universities is higher than that in private universities.

Keywords: *Growth, Mindset, Undergraduate Student*

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INTRODUCTION

Growth mindset, a belief that intelligence can be improved and developed, is one of important factors that can positively influence people's achievement (Claro et al., 2016). The inverse of growth mindset is fixed mindset, which is a belief that intelligence cannot be changed. People with a fixed mindset think that they were born with certain levels of intelligence. Various studies have shown that a growth mindset affects students' achievement. Students with a growth mindset tend to achieve higher scores than those with a fixed mindset. An experiment involving 12,490 students in the United States of America, for example, shows that students' grades could change because of a growth mindset intervention (Yeager et al., 2019). Also, another finding in Central Java, Indonesia reveals that students' growth mindset could predict their performance at schools with the enrichment of grit (Wahidah & Royanto, 2019).

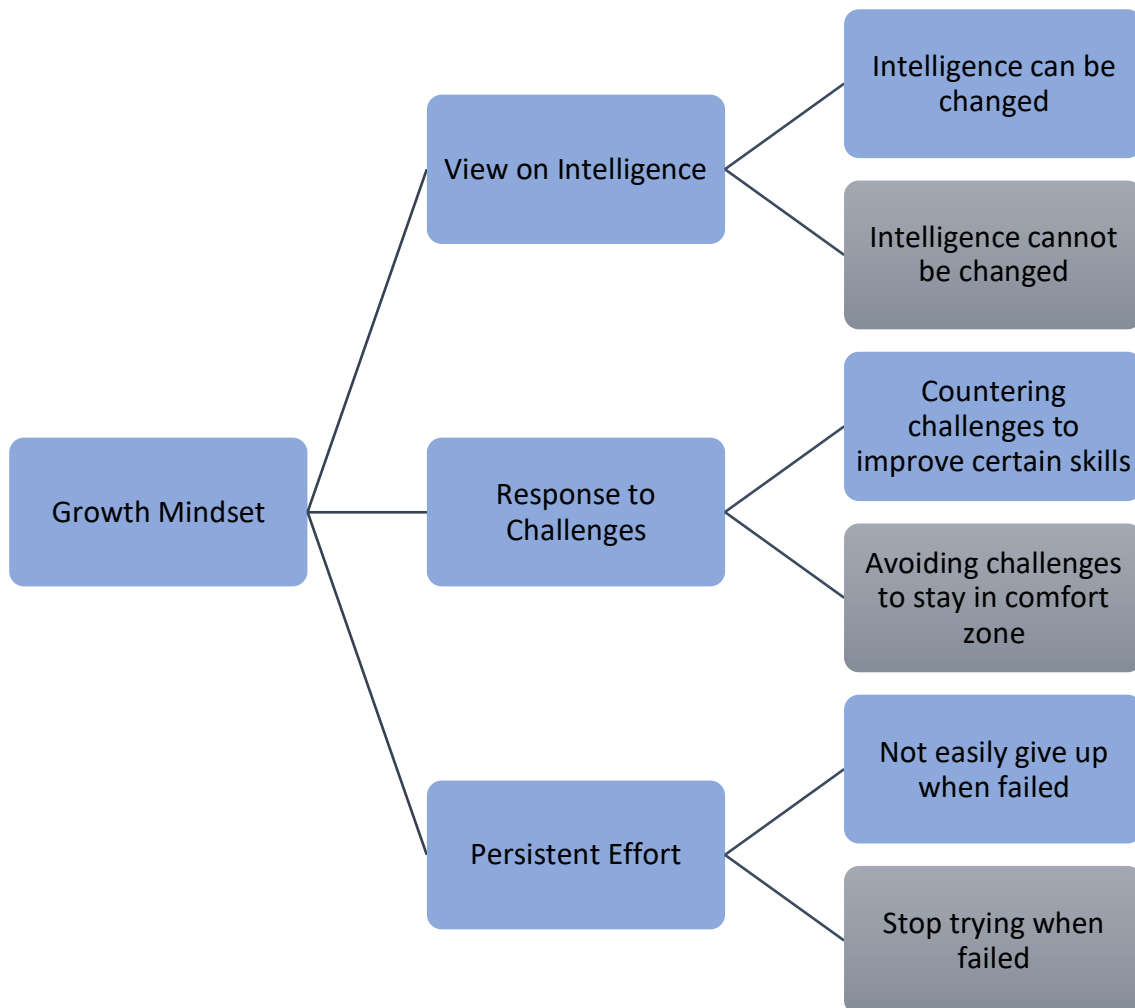
On the other hand, in the United Kingdom a cross-sectional study with 146 undergraduate students participating shows that the growth mindset had no significant effect on their grades at any point (Li & Bates, 2020). In addition, another research also shows that the relationship between growth mindset or fixed mindset and students' achievement is relatively low for third year students or more (Kaijanaho & Tirronen, 2018). These confirm that a growth mindset does not affect students' performance. However, the latter study clarifies that fixed-mindset students probably had already dropped out before reaching the third year. As such, students with a fixed mindset need special treatment that can assist them to cope with difficulties when studying at universities or schools.

Students studying education programs have the opportunity to become a teacher or educational practitioners who will be in direct contact with students. The results of the Program for International Student Assessment 2018 show that approximately 60% of Indonesian students believe that they could not change their intelligence (OECD, 2019). This indicates that they have not developed a growth mindset. Meanwhile, in some developed countries such as the United Kingdom and the United States, the concept of growth mindset has been introduced to students since primary schools because this is considered essential to support students' performance at schools. If this is to be implemented in Indonesia, teachers play a pivotal role to give a growth mindset intervention to their students.

Before exploring how to give intervention to students, it is important to explore the growth mindset of undergraduate students who are studying education programs. Besides, this study also aims to compare the growth mindset of private and public university students. Given that most students prioritise applying for public universities instead of private universities, there might be some different characteristics of students from private and public universities. In fact, high achieving students are likely to get enrolled in public universities. However, students enrolled in private universities probably have high grit, a sign showing the presence of a growth mindset, because they never gave up to find a university to study (Chrisantiana & Sembiring, 2017).

Research Framework

The growth mindset explored in this research consists of three indicators: view on intelligence, response to challenges, and persistent effort (see Picture 1).



Picture 1. The Indicators of Growth Mindset

View on Intelligence

Carol Dweck introduced the idea of growth mindset to describe students who believe that their intelligence can be improved whereas the counter of this is fixed mindset. This is why in this study students' view on the flexibility of their brains become the first indicator of growth mindset.

Response to Challenges

Despite the controversy regarding whether the growth mindset influences students' achievement or not (as explained in the introduction), it is imperative that the growth mindset is a theory of response to challenges (Yeager & Dweck, 2020). To illustrate, some students might fail the national exam to enter public universities, but with a growth mindset they will not easily give up. Therefore, they are likely to try another opportunity such as applying for a private university.

Persistent Effort

Growth mindset is also related to grit, which is often defined as “passion and perseverance for long time goals” (Duckworth, 2016). Students with a growth mindset tend to persevere with challenges because they value efforts (Hochanadel & Finamore, 2015). This is why persistent effort becomes one indicator of growth mindset in this study.

RESEARCH METHOD

This is a quantitative study aiming to describe the growth mindset of undergraduate students studying education programs in South Sulawesi, Indonesia. Besides, this study also compares the growth mindset of undergraduate students from private and public universities. There were 452 students participating in this research: 215 students from private universities and 237 students from public universities. The data were collected through a validated questionnaire – 12 items, 6 options each item from strongly agree to strongly disagree (see Table 1) – about students’ growth mindset with three indicators: view on intelligence, response to challenge, and persistent efforts. The data were analysed statistically to describe the students’ growth mindset (see Table 2) and were also analysed using independent sample t-test to compare the mean and variance of the growth mindset of private and public university students.

Table 1. Distribution of questionnaire based on the literature framework

Indicators	Favourable Items	Unfavourable Items
View on Intelligence	4, 12	1, 3
Response to Challenges	5, 7	6, 8
Persistent Efforts	9, 11	2, 10
Total	6 items	6 items

Table 2. The Classifications of Students’ Growth Mindset

Categories	Score Range
High Growth Mindset	$60 < x \leq 72$
Growth Mindset	$48 < x \leq 60$
Mixed Mindset	$36 < x \leq 48$
Low Growth Mindset	$24 < x \leq 36$
Fixed Mindset	$12 \leq x \leq 24$

RESULTS

Descriptive Analysis

Statistics descriptive analysis shows that the mean of students' growth mindset in public universities is slightly higher (50.88) than that in private universities (49.36). The details of the data can be seen at Table 3.

Table 3. The Comparison of Statistics Descriptive Analysis

Analysis	Private University Students	Public University Students
Mean	49.36	50.88
Standard Deviation	5.81	6.16
Minimum Score	27	32
Maximum Score	64	68
Skewness	-0.018	-0.010

Judging from the minimum and maximum scores of growth mindset, students in public universities had higher scores than those in private universities. However, the skewnesses of both groups are negatively skewed to the left. The distribution and frequency of students' growth mindset in both groups can be seen at Table 4.

Table 4. The Frequency of Students' Growth Mindset in Private and Public Universities

Categories	Private University Students	Public University Students	Total
High Growth Mindset	5 (2.33%)	13 (5.49%)	18 (3.98%)
Growth Mindset	113 (52.56%)	145 (61.18%)	258 (57.08%)
Mixed Mindset	96 (44.65%)	75 (31.65%)	171 (37.83%)
Low Growth Mindset	1 (0.47%)	4 (1.69%)	5 (1.11%)
Fixed Mindset	0 (0%)	0 (0%)	0 (0%)
Total	215	237	452

Based on the data in Table 4, the percentage of undergraduate students developing a high growth mindset and growth mindset in public universities was higher than that in private universities. In contrast, there were more students in private universities (96) who had a mixed mindset than those in public universities (75). In terms of low growth mindset, 4 students from public universities had it while only one student from a private university in this category. However, the

scores of these 4 students were higher than that of one student in a private university.

Independent Sample T-test

Before conducting an independent sample t-test, it is required to test whether the data from both groups are normal and homogen or not. Based on the analysis using Statistical Package for the Social Sciences (SPSS) 26, the growth mindset data of both groups are normal and homogen because all of the p values (sig.) are more than 0.05 (see Table 5).

Table 5. The Test of Normality and Homogeneity

Analysis	Growth Mindset of Private University Students	Growth Mindset of Public University Students
Test of Normality (Kolmogorof-Smirnov)	Sig. 0.200	Sig. 0.200
Test of Normality (Shapiro-Wilk)	Sig. 0.090	Sig. 0.312
Test of Homogeneity of Variance Based on Mean (Levene Statistic)	Sig. 0.539	

After that, an independent sample t-test was used to examine whether the means of students’ growth mindset scores for both groups are significantly different or not. Table 6 shows that the means’ difference of growth mindset scores between students in private universities and and students in public universities was -1.52, which means that the mean of growth mindset scores of students in public universities was higher than that in private universities. What is more, the difference is significant because the p value is less than 0.05.

Table 6. The Results of Independent Sample T-test

Analysis	Results
Mean Difference	-1.52
P value (sig.)	0.007

DISCUSSION

The aforementioned evidence reveals that more than a half (276 students) of students have already developed a growth mindset (258 students) or high growth mindset (18 students). Of 276 students, 185 students are from public universities and 118 students are from private universities. However, only a small proportion of them had a high growth mindset, 5.49% from public universities and 2.33% from

private universities. Obviously, the percentage of students from public universities who had a growth mindset was higher than that from private universities. The result of an independent sample t-test also confirms that there was a significant difference of means between students' growth mindset in public universities and those in private universities.

These findings suggest several possibilities for the future of education in Indonesia, particularly in South Sulawesi. First of all, future teachers who are now students studying education programs will have the opportunity to keep developing a growth mindset in the future. In addition, this might change the PISA results about the growth mindset of secondary school students in the future because the future teachers can possibly share their beliefs to their students through teaching and learning process (Seaton, 2018). However, to achieve this, it is essential to enrich teachers' skills to integrate growth mindset intervention into classroom activities because even though teachers already know the theory of growth mindset, they might find it challenging to improve the growth mindset of students in practice (Boylan et al., 2018; Patrick & Joshi, 2019).

This study also suggests educational institutions and teacher training to integrate the theory of growth mindset into their curriculum so that undergraduate and postgraduate students (prospective teachers) have the opportunity to improve the quality of their teaching practices. A study shows that telling students about how their brains work tends to improve their motivation to study (Ng, 2018) and to engage students in active learning (Cavanagh et al., 2018). In short, the good end starts from the quality of higher education institutions (universities) that provide education programs as to how they train and educate the prospective teachers about the importance of growth mindset.

CONCLUSION

In conclusion, more than a half of undergraduate students studying in education programs already developed a growth mindset. Most of them are from public universities. Meanwhile, more undergraduate students from private universities developed mixed mindset than those from public universities. Independent sample t-test analysis also reveals that there was a significant mean difference of growth mindset between public and private university students where those studying at public universities had higher average score of growth mindset. This study implies that private universities should assist their education students to understand more about the theory of growth mindset. What is more, integrating the practice of growth mindset interventions into learning activities might be a feasible solution at this moment. Indeed, both private and public universities providing education programs have the responsibility to improve the quality of the prospective teachers.

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