

Logan Spitzley  
James Madison University

## **The Impact of Growth Versus Fixed Mindset and Goal Orientations on Students' Grade Point Average**

The transition into high school can be a challenging time for many teenagers, which is why Carol S. Dweck and other psychologists set out to study growth versus fixed mindset in high school students and determine how it was affecting their schoolwork. Growth versus fixed mindset has to do with the way people learn. A person with a fixed mindset believes that their intelligence is static and they will not be able to gain further knowledge on any given subject. A growth mindset person believes that they can expand their intelligence if they work hard enough. My psychology class at James Madison University studied a similar topic. In addition to researching how growth versus fixed mindset affects a student's grade point average (GPA), we also looked at the impact performance and mastery goals have on GPA. Those students with performance goals are only focused on learning the material well enough to pass the class or "perform" well on a test. On the other hand, someone with mastery goals is concerned with accomplishing the class and "mastering" the material in the long run. I predicted that there would be a positive correlation between growth mindset and GPA, mastery goal orientation and GPA, and performance goals and GPA. On the other hand, I predicted that there would be a negative growth mindset correlation to performance goals.

### **Method**

#### **Participants**

For the purposes of this experiment, everyone in the Psychological Research Design and Data Analysis class participated. Data was collected from a total of 362 students from James

Madison University. However, 20 participants had missing data. The majority of the students who were surveyed identified as female, while only 23.5% are male. Similarly, 84.8% of the participants are Caucasian and only 3.6% are African American. 3.3% identify as Hispanic and 3% described their race as Asian. 232 of the students who were surveyed are sophomores, 98 are juniors, 19 are freshman, and only 4 are seniors. Participants received compensation in the form of class credit for completing the survey.

### **Materials**

The students took an electronic survey from Qualtrics. By using different scales, we were able to observe the effect that mindsets and goal orientations have on GPA. For example, there were four total items for the growth mindset scale and they were scored one through five with one being “strongly disagree” to five being “strongly agree”. Therefore, the range of possible total varied from four to 20. The question looked something like this: “I believe intelligence can change if I work hard”. Likewise, the mastery goals scale consisted of three total items that were again scored from one to five. The range of possible total for mastery goal orientation was three to 15.

### **Procedure**

Students entered the computer lab the day of the experiment and took an online survey. It consisted of a variety of scales on growth mindset, fixed mindset, mastery goals, performance goals, and demographic questions. The data was submitted online and reviewed using SPSS. There were 183 total survey items and two growth mindset questions were reverse coded in order to avoid participant bias.

### **Results**

We ran a Pearson's correlation on 342 of our participants due to 20 having missing data, in order to investigate the relationship between growth mindset scores and GPA. We did not find a significant result, but we did have a small negative correlation of  $r = -.044$ ,  $p = .416$ .

Researchers also ran a correlation to investigate the relationship between mastery goals and GPA on 342 of our participants and again did not find a significant result. However, we did find a small positive correlation,  $r = .016$ ,  $p = .264$ .

In addition, we ran a correlation on 342 participants in order to investigate the relationship between performance goal orientation and GPA. We did in fact find a significant result, as well as a small positive correlation,  $r = .107$ ,  $p = .05$ .

Lastly, we ran a correlation to examine the relationship between growth mindset and performance goals on 342 of our participants. We did not find a significant result, but we did have a small negative correlation of  $r = -.169$ ,  $p = .002$ .

### **Discussion**

All of my hypothesis were correct except for growth mindset and GPA. I predicted that there would be a positive correlation between the two. However, the data showed that there is a small negative correlation between growth mindset and GPA. There were a few limitations that we had throughout the study. We did not have a diverse group of participants, with around 75% female and about 80% who are white. This restricted our data and results. We also only surveyed students who are psychology majors and who are enrolled in the Psychological Research Design and Data Analysis course. The participants are college students who attend James Madison University, which could have also skewed our data since they likely have a higher GPA. For future replications of this study, I would suggest doing research on students earlier on at the

middle school or even elementary school level. This way, they can use their results to change how they learn and study in the future to achieve better academic success and knowledge of the material being studied.

### References

Yeager, D. S., Romero, C., Paunesku, D., Hulleman, C. S., Schneider, B., Hinojosa, C., Dweck, C. S. (2016). *Using design thinking to improve psychological interventions: The case of the growth mindset during the transition to high school*. *Journal of Educational Psychology*, 108(3), 374-391.