

Intro

As part of statistics class, we designed a survey based around student engagement because we were curious about the causes of the "Great Enflakination." We developed an engagement score for each student, and then looked for correlations between those scores and other variables.

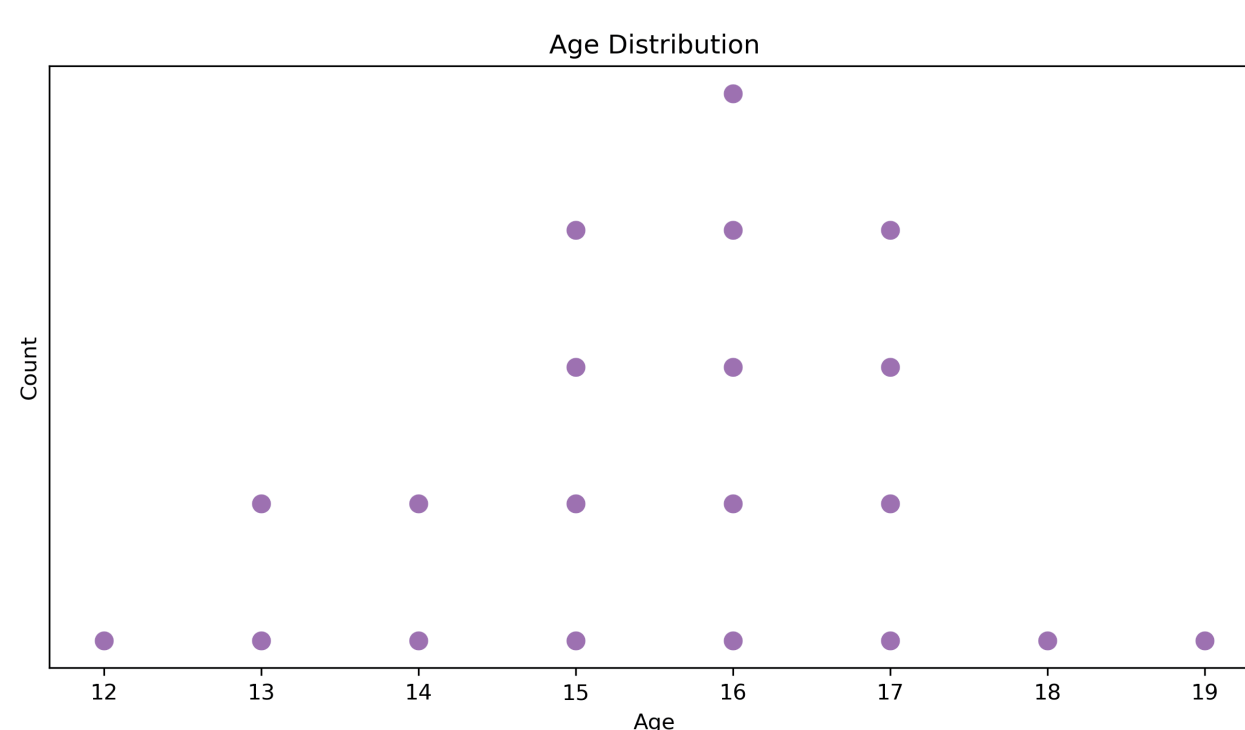
Lingo

Engagement score: a weighted average based on select survey answers (see graphic on right).

Weighted average: the average of a set of values, where the values can have different levels of importance.

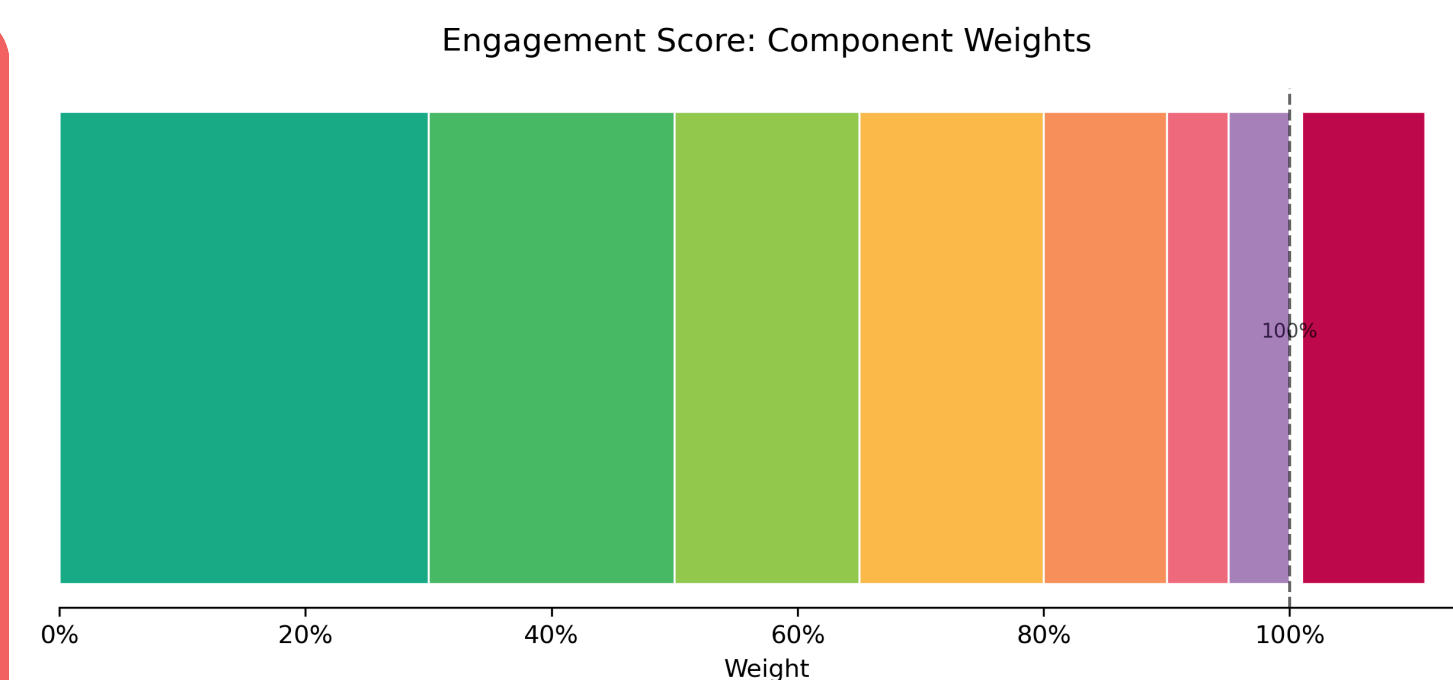
Correlation: two variables are correlated when they tend to change together. A high positive % means a strong positive correlation. A high negative % means a strong negative correlation.

P-value: the p-value of a correlation is the probability of observing that correlation due to random chance. A statistically significant p-value is 0.05 or lower.



Limitations

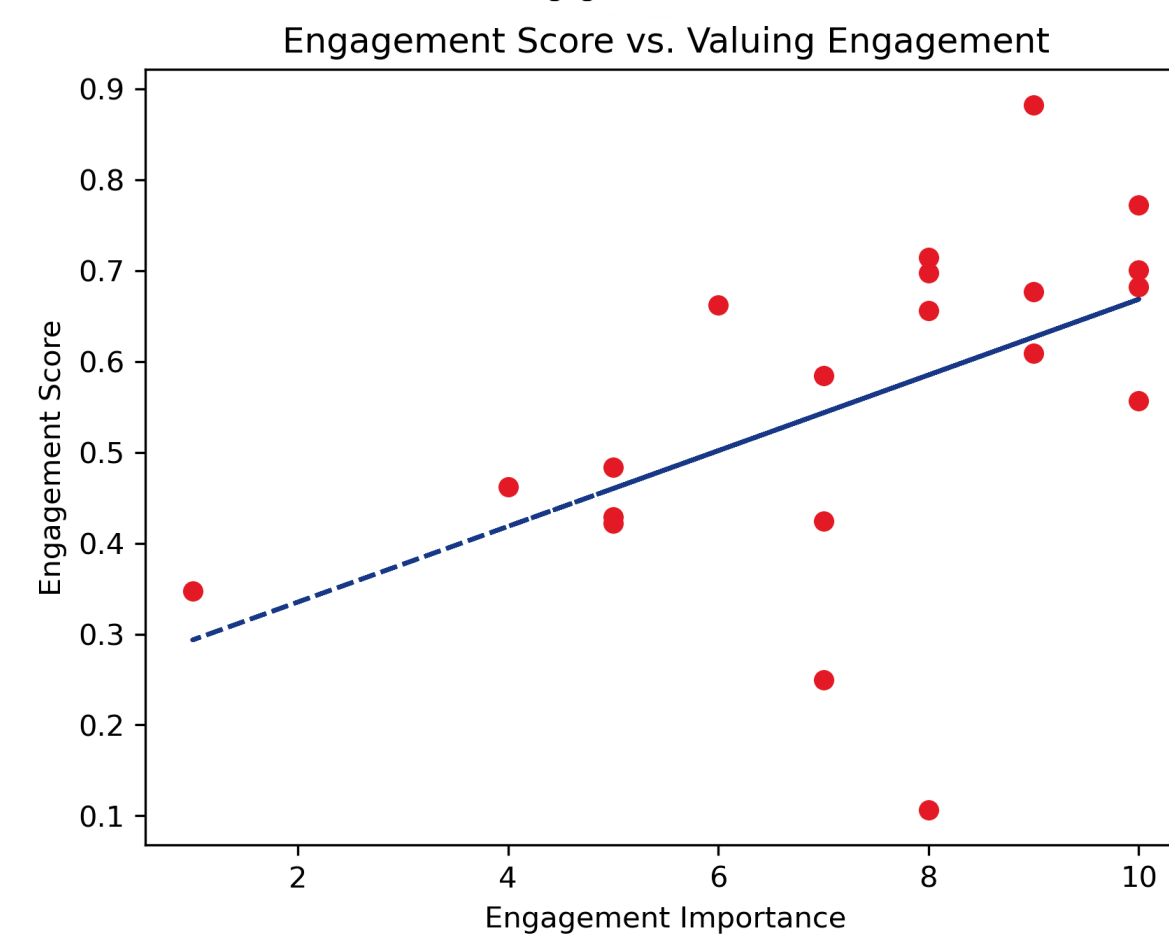
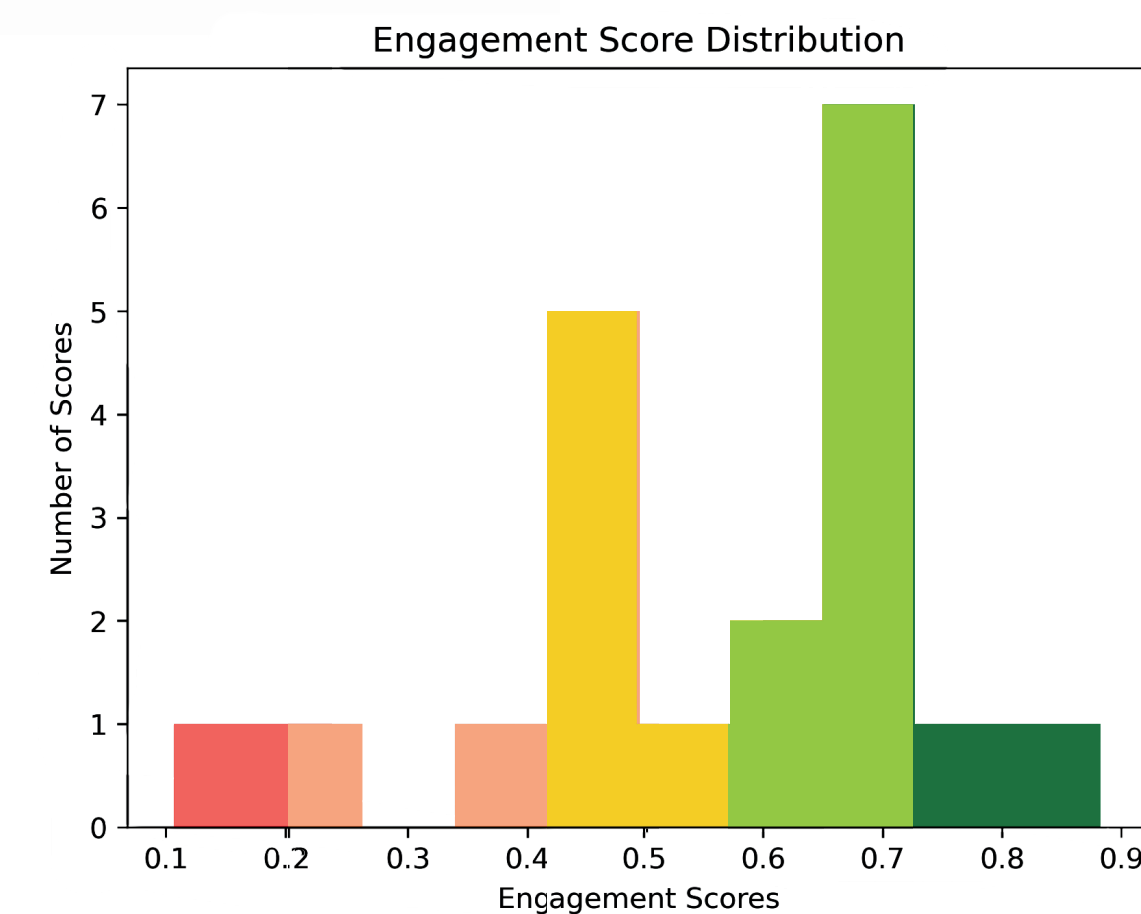
- We looked for many correlations, increasing the probability of finding one by chance.
- Small sample size.
- Used 1-10 scales, which can confuse participants.
- Did not distinguish between screen use in class vs. outside of class.
- Relied on self-reports, which can be inaccurate.
- Sample might be skewed toward more engaged members.
- There are multiple ways to calculate an engagement score.



Components

- Classes Reg Attending (30%)
- Classes Ratio (20%)
- Attendance Ratio (15%)
- Class Engagement (15%)
- Social Hours (10%)
- Interesting Classes (5%)
- Schedule Conflict (5%)
- Screen Time Penalty (10%)

This graph displays which factors we used to calculate engagement scores.



This **scatter plot** shows that valuing engagement is correlated with being engaged. This suggests that engagement comes from personal values.

Findings

Valuing engagement ("On a scale of 1-10, is class attendance/engagement something you deem important at BSLC?") is moderately/highly correlated with being engaged.

- Correlation = 65%
- P-value = 0.002

Identifying learning as a top-two reason for attending BSLC is moderately correlated with being engaged.

- Correlation = 46%
- P-value = 0.04

Ease of transportation to BSLC is moderately negatively correlated with engagement.

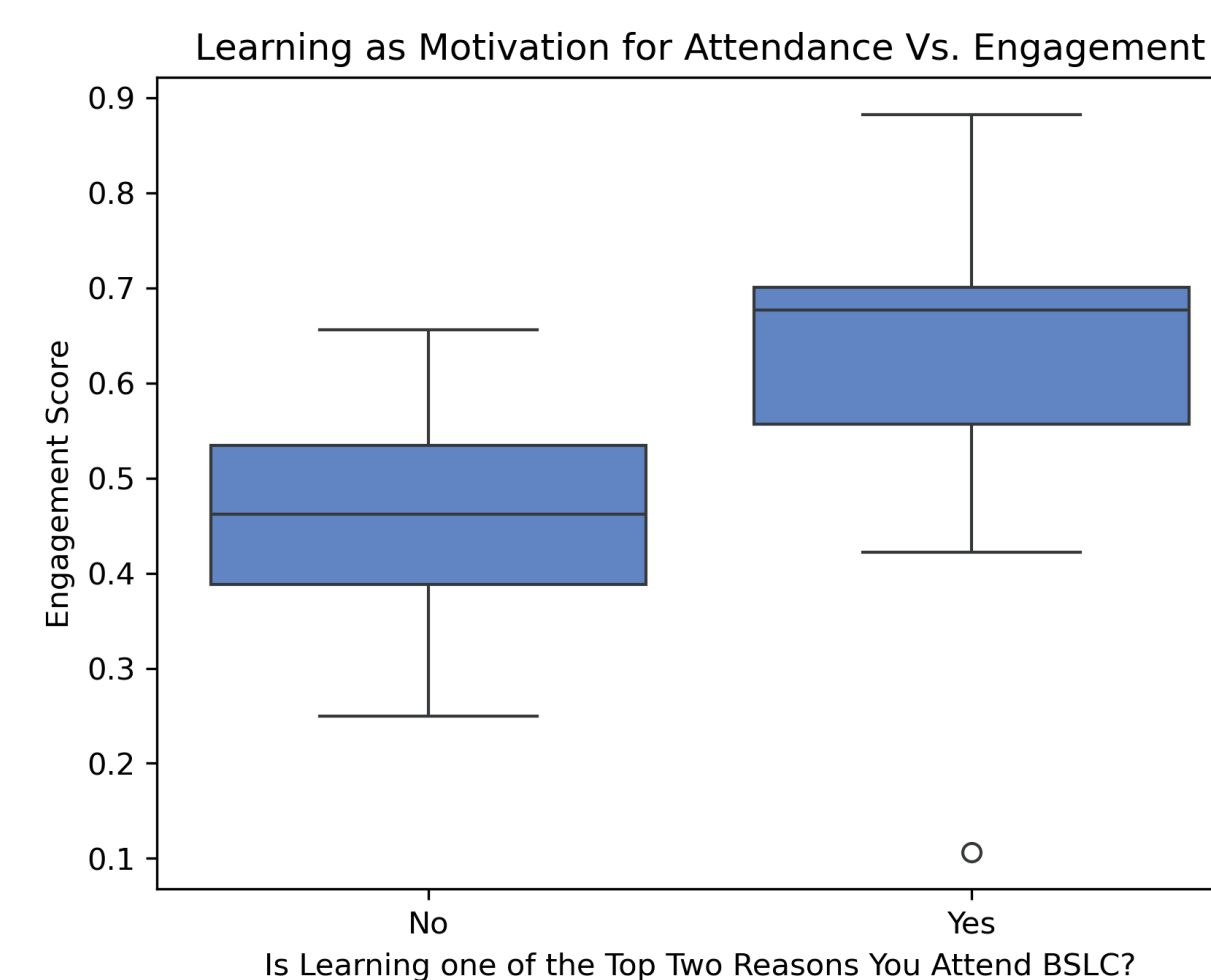
- Correlation = -45%
- P-value = 0.049

Suggestive finding: having a regular sleep schedule is moderately correlated with engagement:

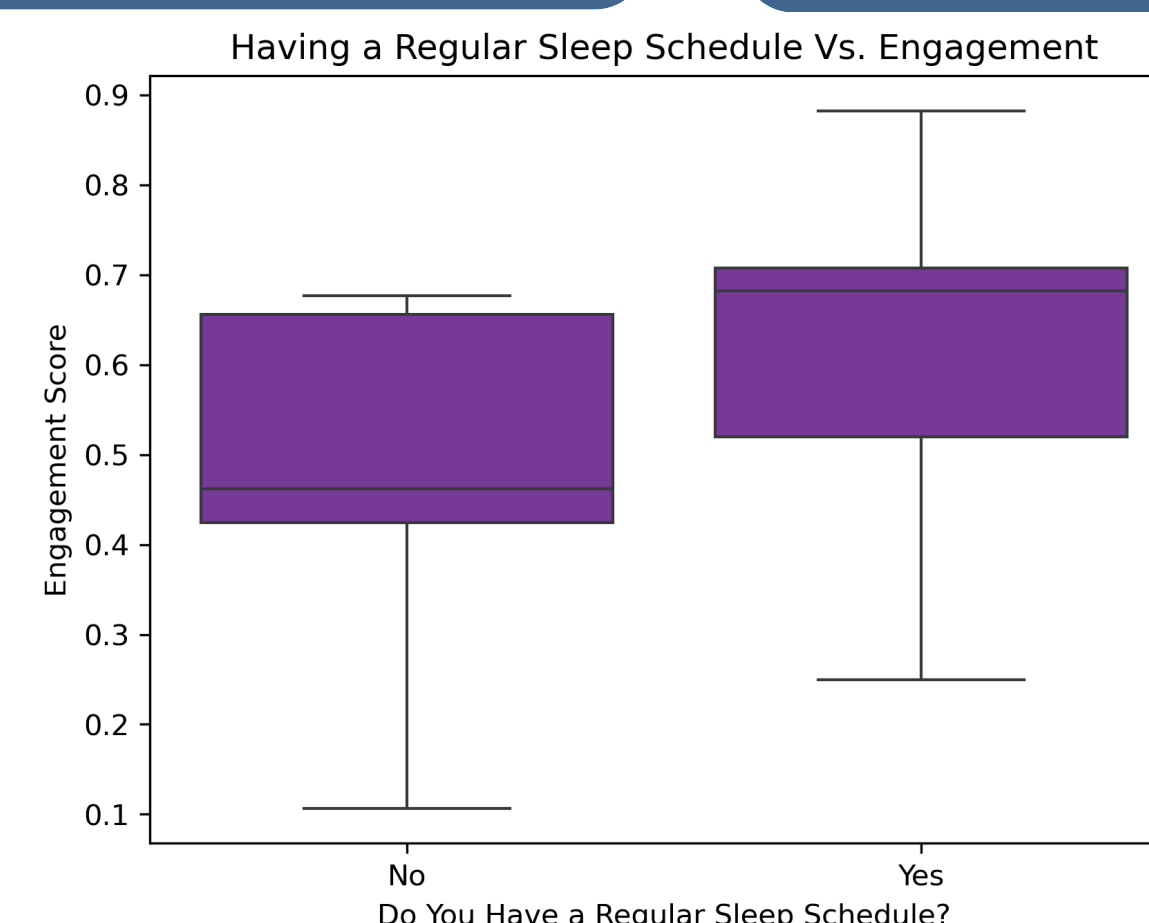
- Correlation = 43%
- P-value = 0.06 (not quite statistically significant)

Noteworthy NON-correlations:

- age & engagement score
- amount of sleep & engagement score
- hours spent socializing & classes regularly attended



This **box and whisker plot** shows that people who say learning is a top reason for attending BSLC tend to be more engaged. This suggests a relationship between engagement and loving learning.



This **box and whisker plot** is interesting not only because of the relationship between engagement and having a regular sleep schedule, but also because *amount of sleep is not correlated with engagement.*



This graph depicts correlations between answers. Darker greens/pinks are more positively/negatively correlated. White and lighter colors are not correlated.

What could help?

We asked each participant what might help increase engagement. These were the top answers.

- **I Don't Know:** this was the #1 answer.
- **Interactivity In Classes:** classes having more for the students to participate in.
- **Lower Screen Usage:** you can pay more attention when you're not on your phone.
- **A Way To Catch Up:** offer ways for people to catch up when they fall behind.
- **Higher Attendance:** a collective action problem! "I'll go if others go."
- **Outside Actives:** take advantage of the great outdoors.
- **Bribery:** offer goodies.

Conclusion

We set out looking for the cause of the Great Enflakination. We found valuing engagement has the most impact on being engaged. We also found that prioritizing learning is correlated with high engagement. This shows that to be engaged, it's helpful to *want* to be engaged and care about learning.

The relationship between regular sleep and engagement is worthy of further study.