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The Impact of Goal-Oriented Visualization on Academic performance

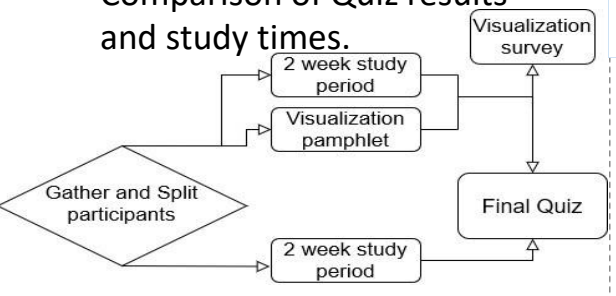
Research Question: How does goal-oriented visualization affect academic performance among students?

Background

- Human mind vs. procrastination: Can visualization (mental imagery) remedy academic delays?
- Well studied in other fields (sport science, psychology).
- Relatively unexplored in academia.

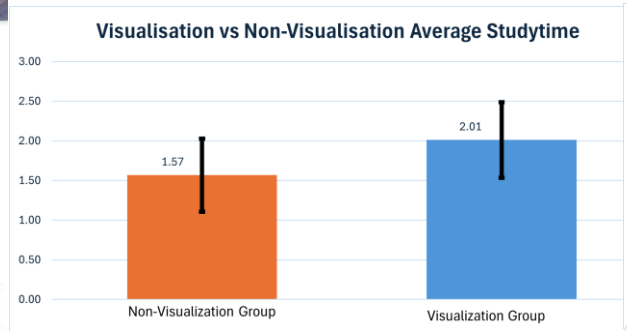
Methodology

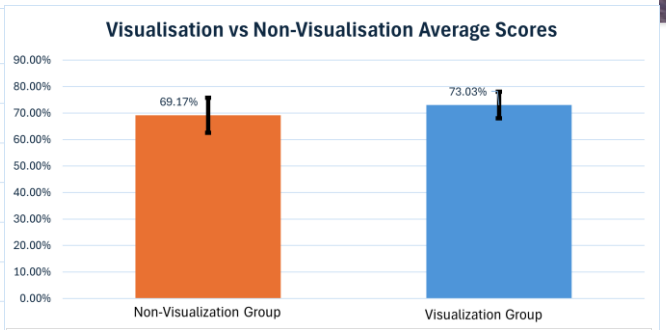
- 2 groups are given 1 week to study machine learning and are quizzed afterwards.
- One group performs goal-oriented visualization.
- Comparison of Quiz results and study times.

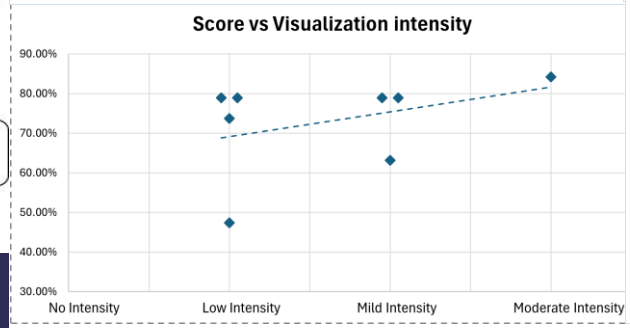


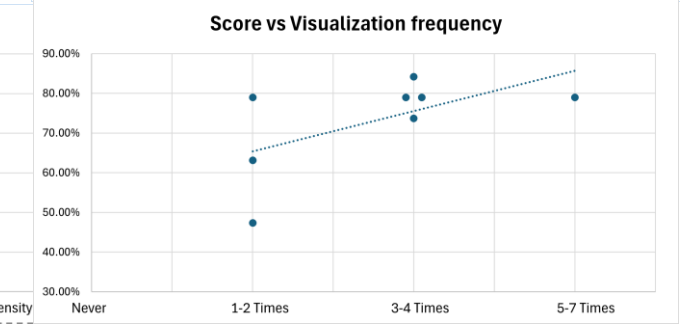
Results

- Measurements: Quiz scores and study times. Participants in the Visualization group are queried about their visualization frequency and intensity.
- 16 total participants, 8 per group. 1 participant in Non-Visualization group did not complete the quiz and is treated as an outlier.
- Results look promising, with higher average scores and study times for the Visualization group.
- Overlapping confidence intervals for average scores and study times.
- Frequency-Score correlation: R-value = 0.59, P-value = 0.11.
- Intensity-Score correlation: R-value = 0.39 P-value = 0.34.









Conclusion

- Results look promising at first, but the low sample size means that the results are not statistically strong.
- Statistical measurements indicate that results are inconclusive.
- Visualization frequency/intensity survey indicates that Participants did not fully commit to the visualization process.

Future works

- Experiment with a larger sample size.
- Longer term study over the period of an academic term.
- Experiment design that aligns participants inner desires with experimental outcomes.
- Comparison of different visualization techniques

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