# 2019 AACN Presentation Mindsets and Learning

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## Abstract


- How are your students studying?
- Are they using the most effective means possible ?
- Doing what they have always done…read the book, take the test, and move on?
- This study used a web-based survey to examine how 73 undergraduate nursing students utilize learning strategies.
- Results found students not utilizing the most effective learning strategies
- Student's mindsets (fixed and growth) were also examined in association with learning strategies


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## Outcomes

- By the end of this presentation, the participant should be able to:
- List at least two ineffective learning strategies
- List two effective learning strategies
- Compare and contrast fixed and growth mindsets
- Identify why the growth mindset model may be more beneficial for learning



## Review of the Literature

- Little is known about how students learn
- Many not so effective methods (Brown, 2014)
  - Not reading the textbook
  - Memorization
  - Not reviewing Content (Remediation)
  - Studying the night before (cramming)
- We do know students need to be shown effective study habits (Brown, 2014)

## Review of the Literature

- There are many effective ways to learn (Brown, 2014)
  - Reading the textbook
  - Studying for understanding (not memorizing)
  - Space out study times (not cramming)
  - Remediation
  - Study in groups
  - Seek out peers and professors

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## Mindsets and Learning

- Thirty Years of research
- We do know that **fixed mindsets** fear failure, avoid mistakes, and **do not remediate** (Dweck, 2016).
- **Growth mindsets do remediate,** using errors as opportunities for learning.

Less is known about mindset proclivity and learning in nursing students.

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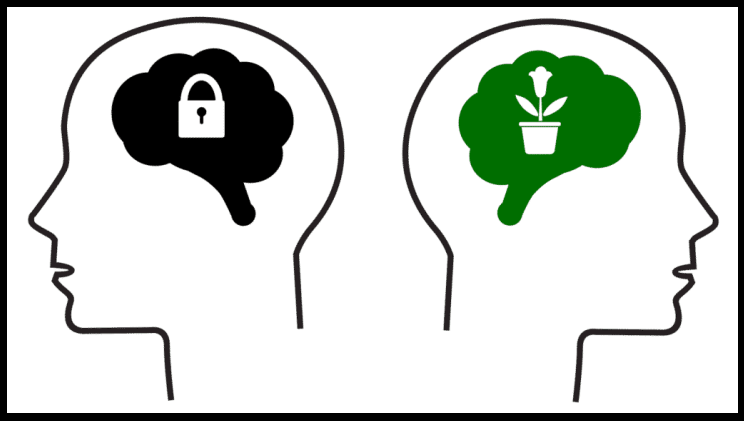
# What are Fixed and Growth Mindsets?



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| | Fixed Mindsets | Growth Mindsets |
|---|---|---|
| **Intelligence** | Innate | Malleable |
| **Goals** | Performance Avoidance | Multiple Learning |
| **Effort** | Low | High |
| **Competence** | Display Normatively Appraised | Development Mastery |
| **Attributions** | Girls cannot do math<br>The teacher did not… | I have not learned that yet |
| **Remediation** | No | Yes |

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# Methods

- With IRB approval, a web-based survey was sent to 300 full time undergraduate nursing students to assess mindsets and learning strategies
- The new **Williams Inventory of Learning Strategies** (WILS) was introduced and utilized in this study.
- The WILS has four subscales: reliability

**Dweck's Mindset Assessment (**α= 95%)

Low scores (3-9) Growth Mindset

High scores (12-18) Fixed Mindset

**Willingness to remediation and review**

(13 items α=0.806)

**Fear of failure and avoidance**

(10 items α=0.664)

**Learning strategies (inventory)**

(13 items α= 0.667)

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# Results

- 73 students responded (24%).
- Female (93%) high school graduates.
- Mean age was 23 years
- Academically strong:
  - GPA 3.1-3.5 (49%) and 3.6-4.0 (43%)

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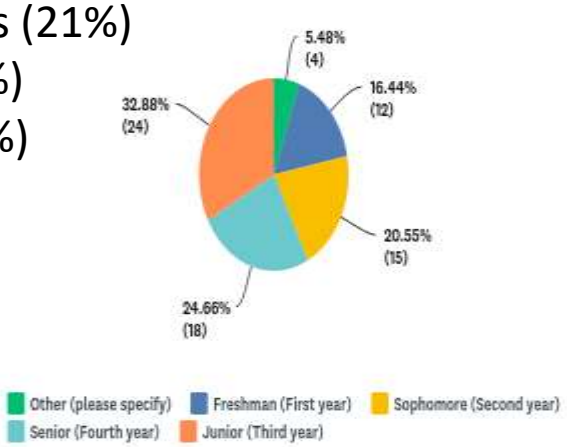
Q1 What year are you in nursing school?

Sophomores (21%)
Juniors (33%)
Seniors (25%)

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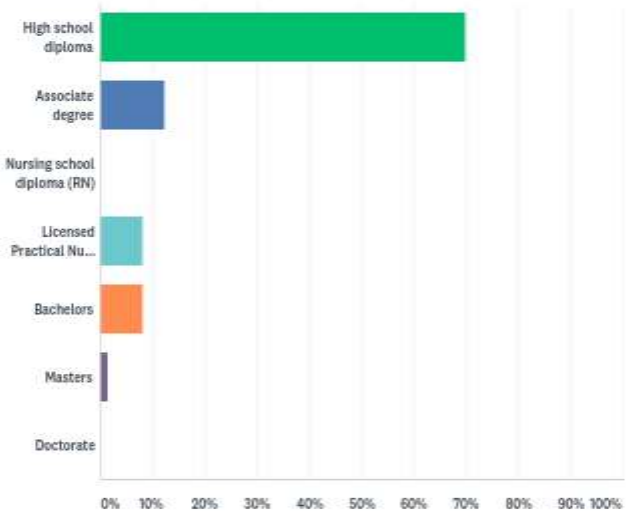
Q5 Highest Level of Education attained?

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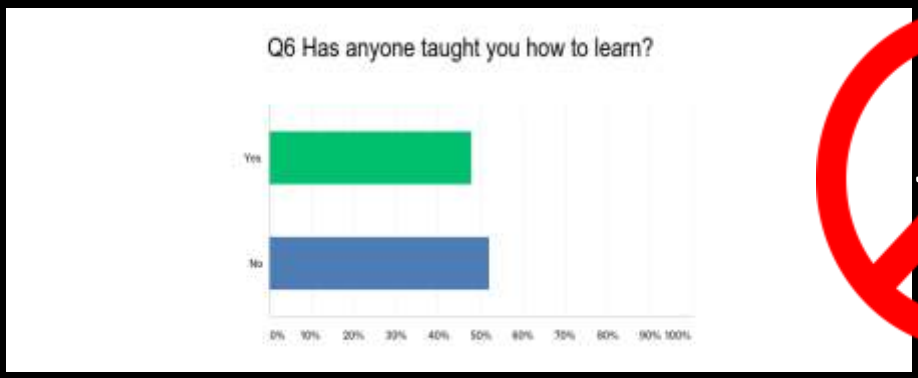
# If you leave here with anything today…

- **No! 52% said no one taught them how to learn !**
- Confirmed in 4 different studies

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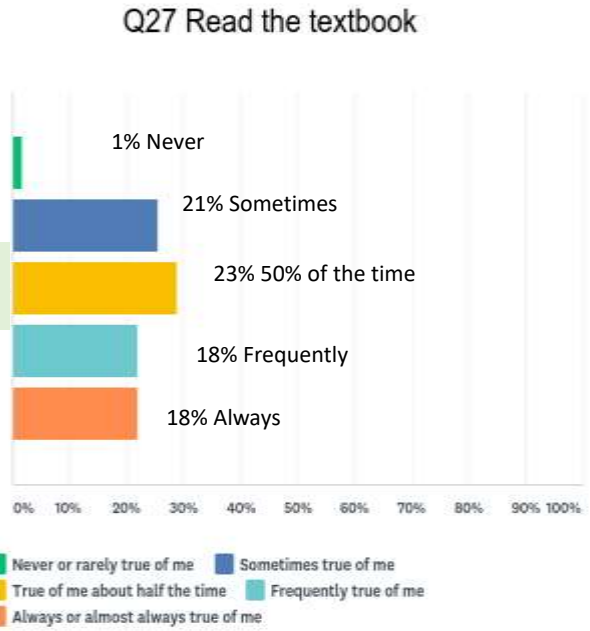
Are they reading the textbooks?

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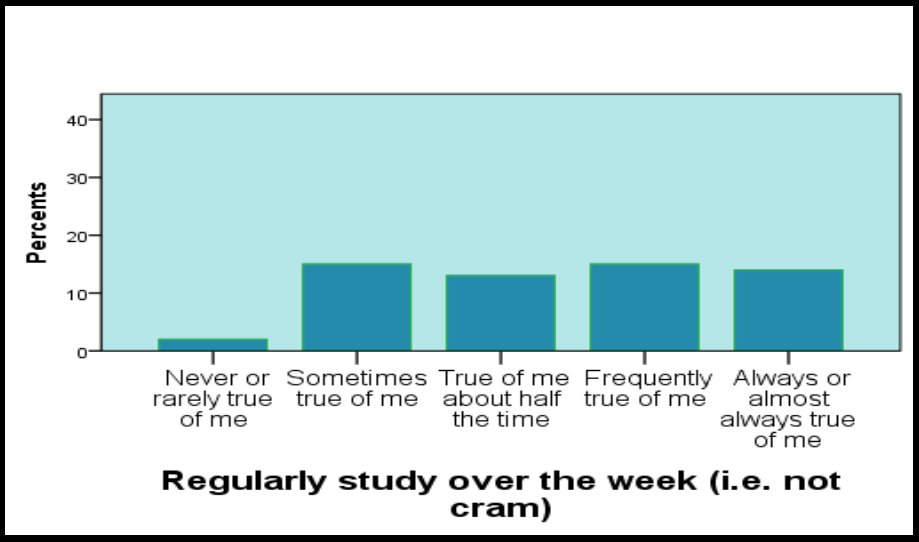
# Regular Spaced Time for Study (not cram)

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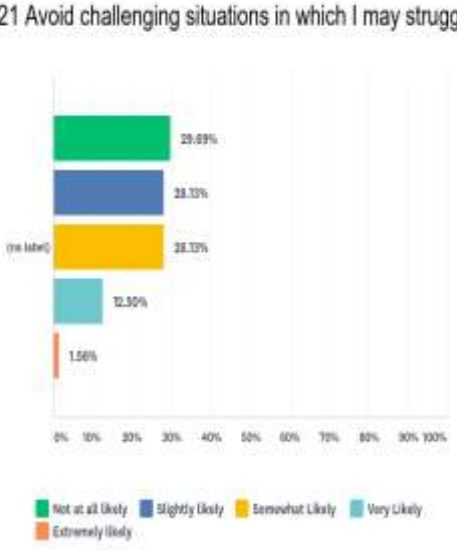
Never

Always


Looking smart?

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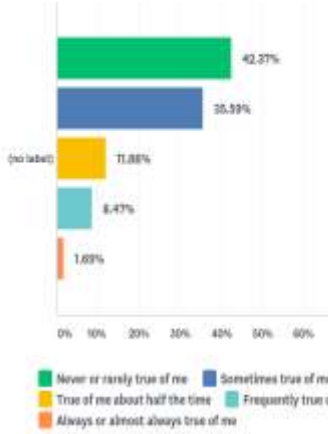
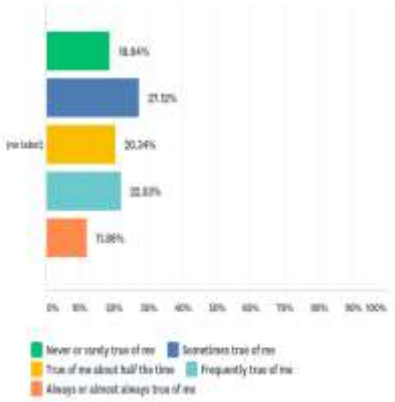
Q34 I find memorizing is enough to get good grades

Never

Always




Q31 I find that reading and re-reading my notes is sufficient to get good grades




Are they reading the textbook?

How do we avoid memorization as a successful test strategy?

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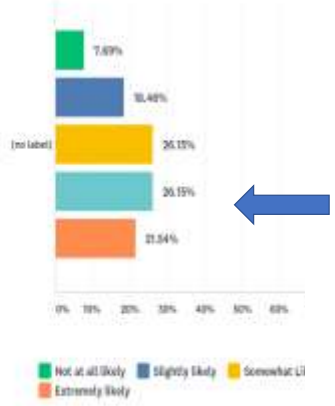
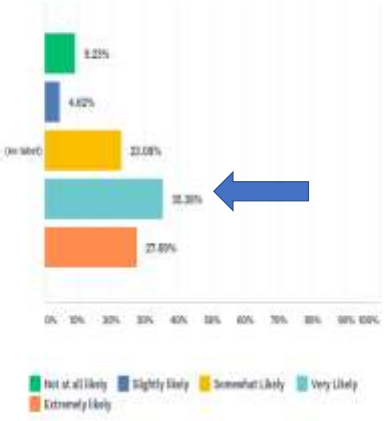
Q14 I will meet with the professor and review what I got wrong.

Never

Always




Q15 I will check with my peers to see what the right answers were.




To whom do they go for remediation and review?

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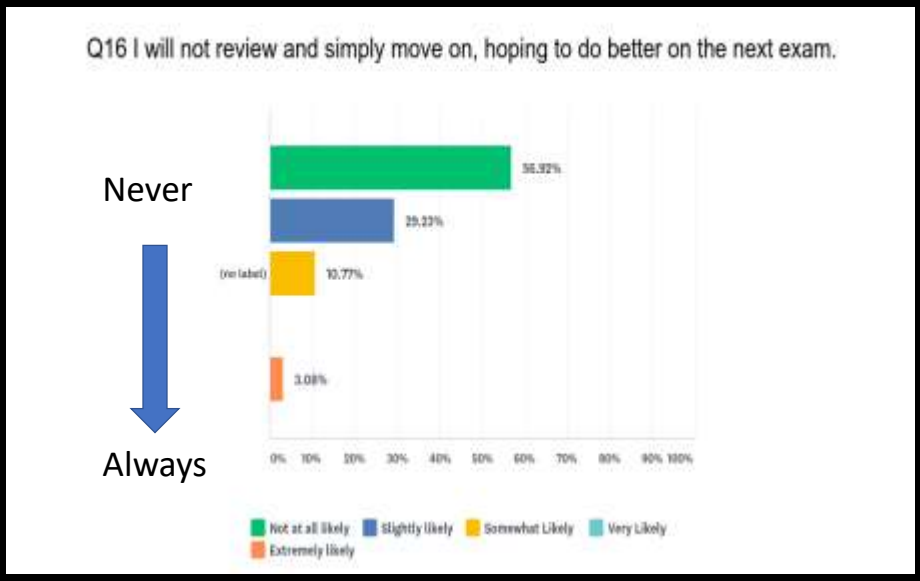
# Not review and Hope for the Best

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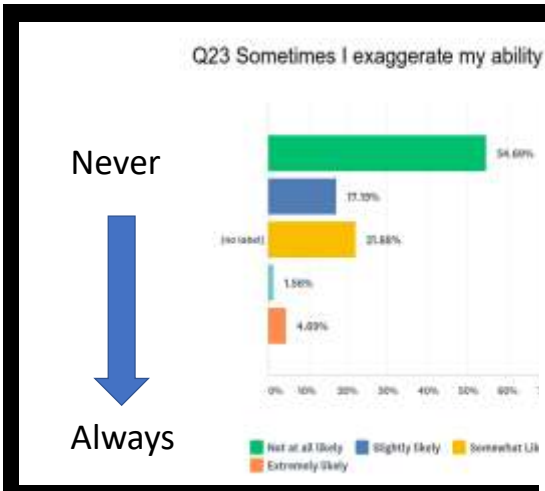


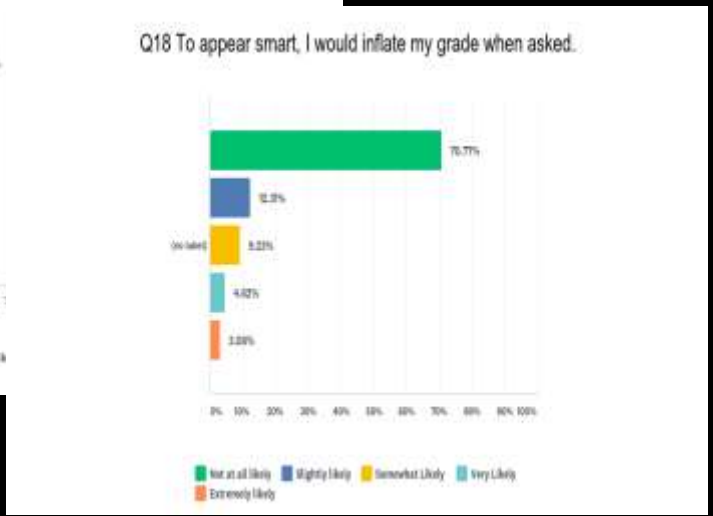


Need to look smart can lead to negative behaviors like exaggeration & inflation

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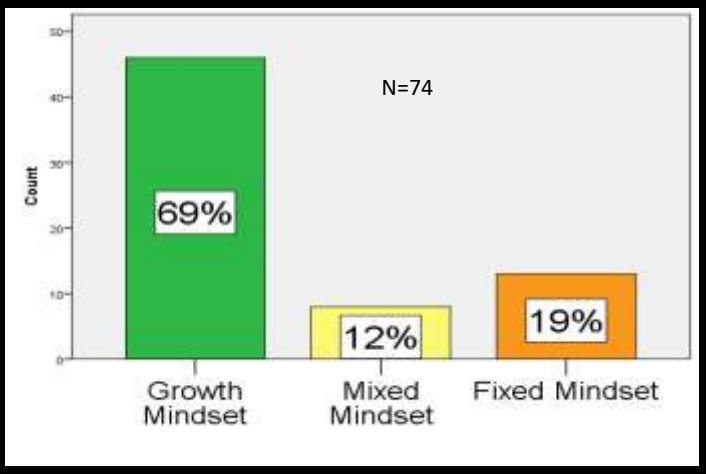
# Under the Hood:
# A look closer at Mindsets and Learning

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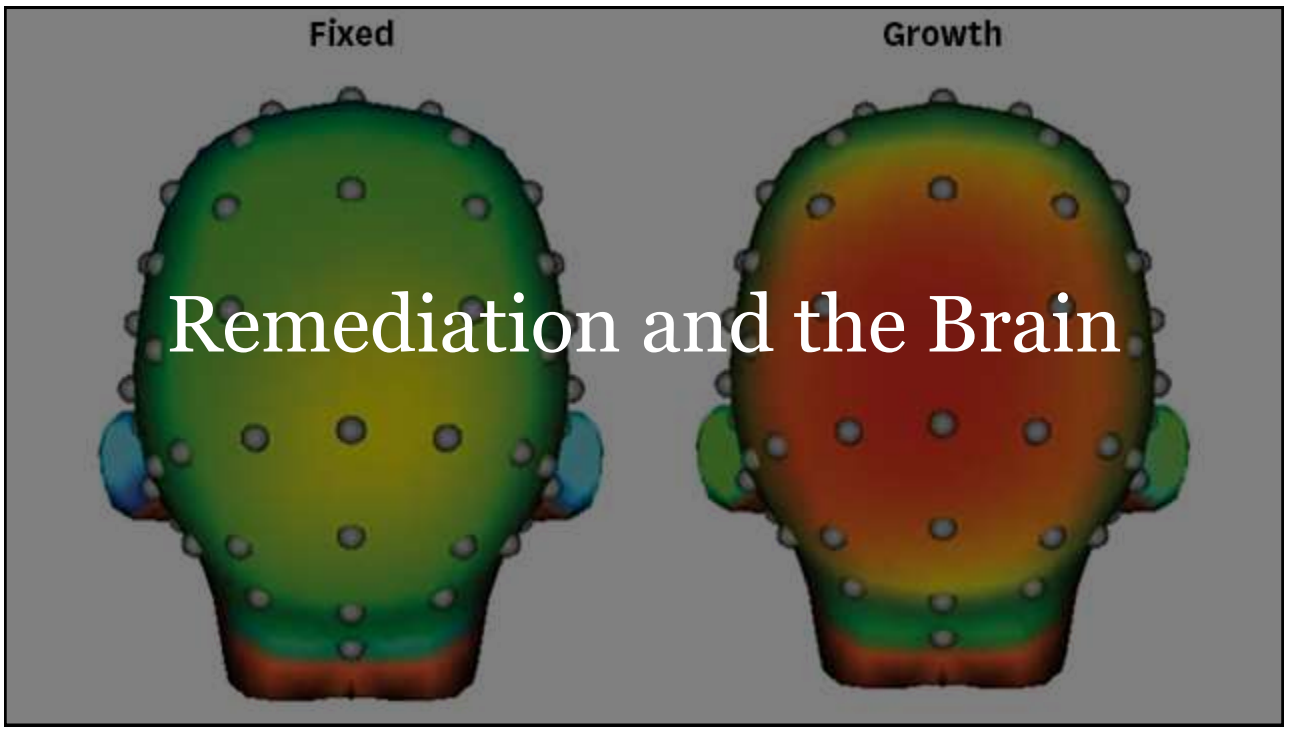


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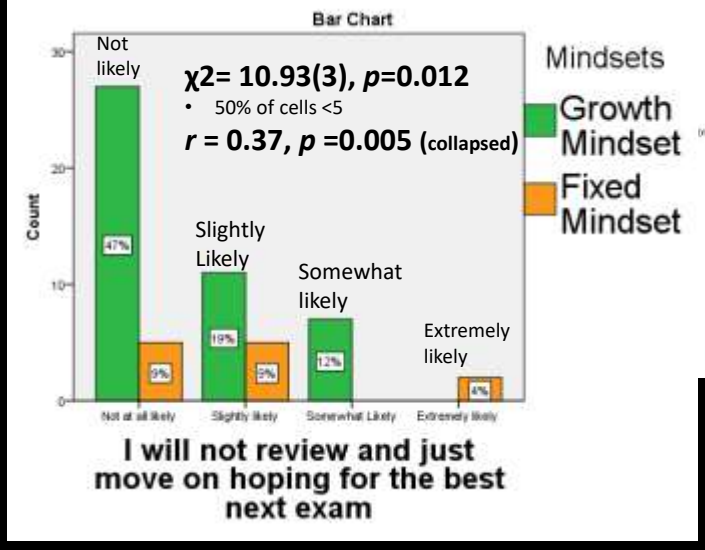
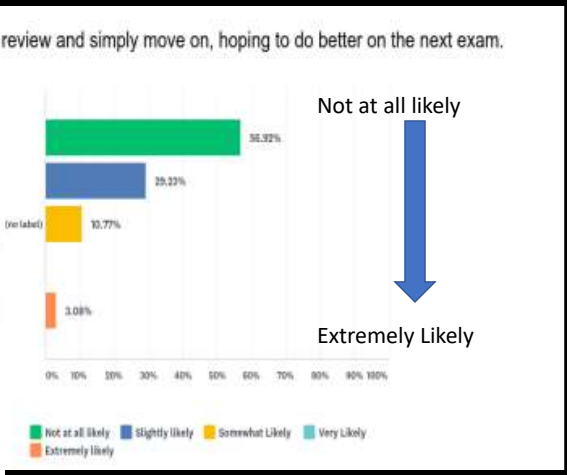
# Remediation

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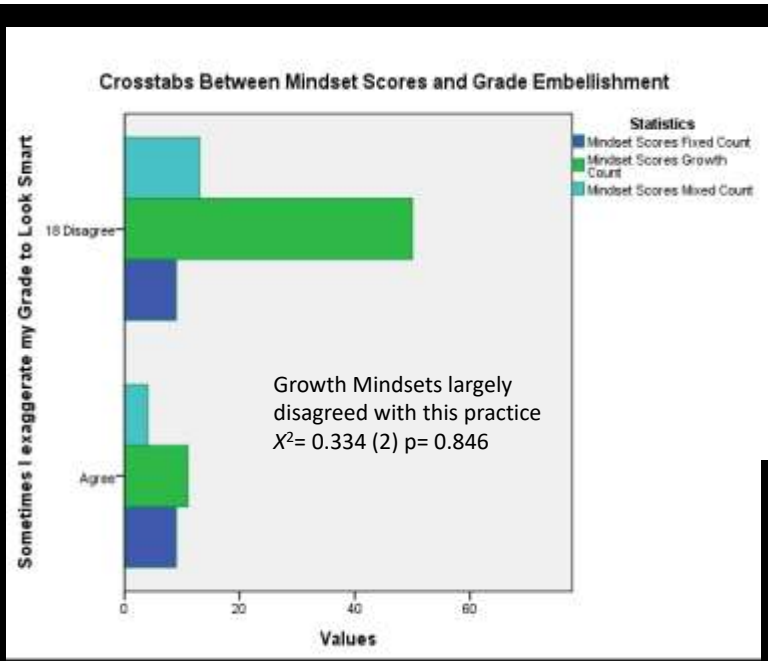


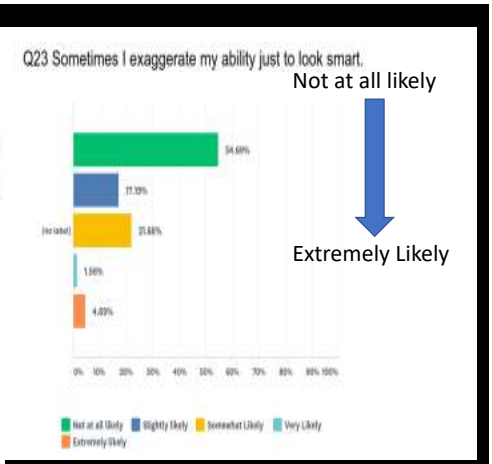


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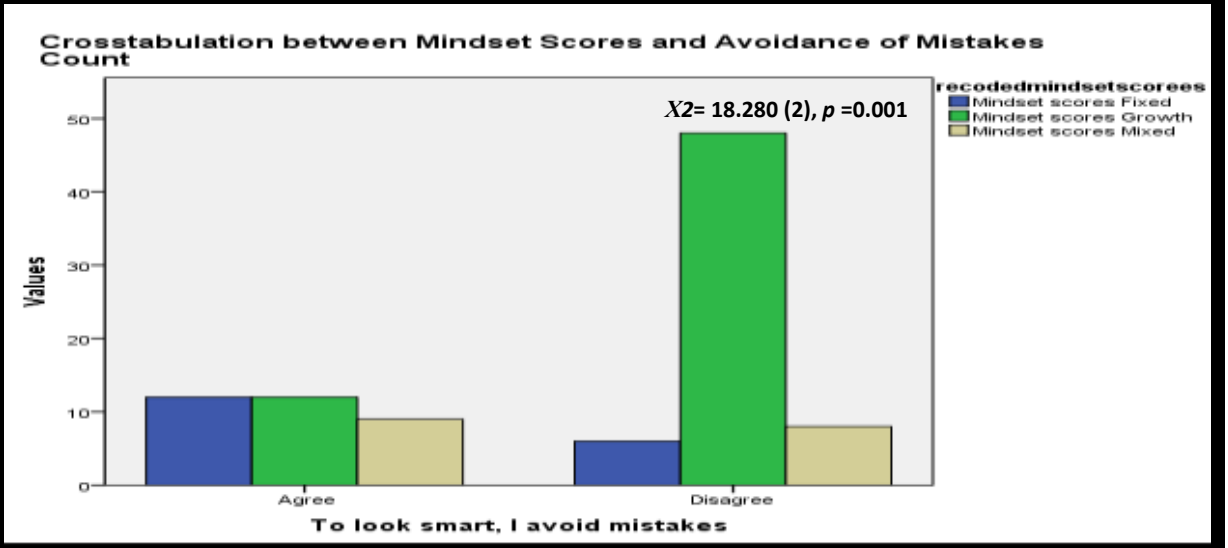
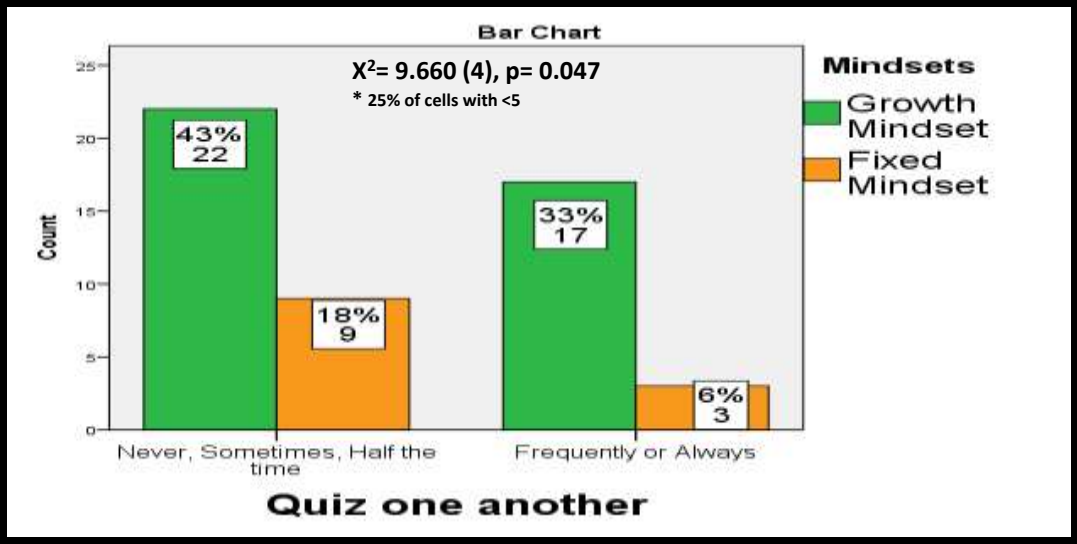
# Mindsets and Mistakes

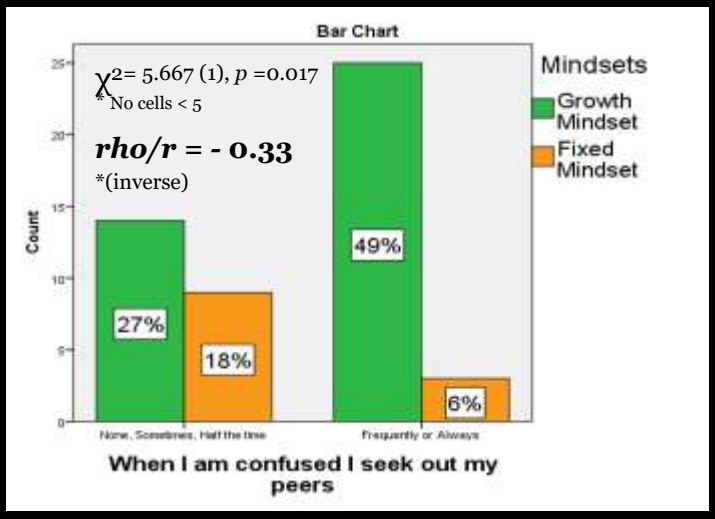





# Quiz One Another



# When Confused Seek out my Peers




*As scores increased towards FM, less peer assistance*
*As scores decreased to GM, increased peer assistance.*
***Growth mindsets review with peers***

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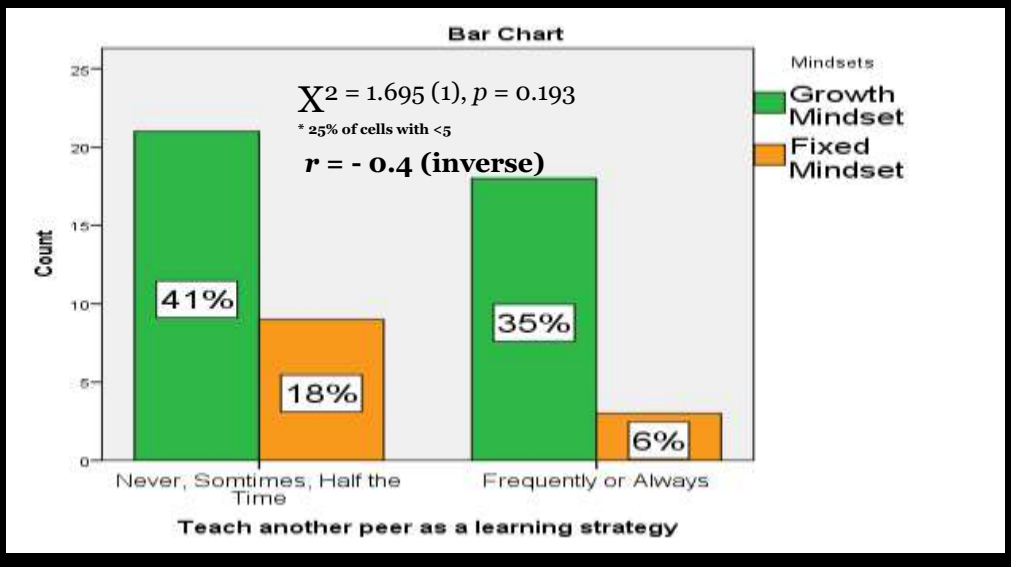
# Teach Another Peer

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# Implications

- It does seem from this small study that

**Fixed Mindset** students:

- Might well embellish their scores to appear smarter
- Not remediate and Hope for the Best
- Avoid making mistakes at the expense of learning from them
- Destined to make the same errors over and over

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# Implications

- It would appear from this study that
- **Growth Mindset** students:
  - Were more willing to make errors and learn from them
  - Remediate and review
  - Quiz each other
  - Seek out peers to learn
  - Teach one another to learn better
  - Be social learners

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# Limitations

- Survey and social bias
- Non-response bias
  - Many people who did not answer could have been FMs and or GMs



# Post Test

- List at least two ineffective learning strategies

List two effective learning strategies

Compare and contrast fixed and growth mindsets

Identify why the growth mindset model may be more beneficial for learning

Your Thoughts?

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A Word from my Favorite Teacher

It is better to
KNOW HOW TO LEARN
than to know.
-Dr. Seuss

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# Thanks for Coming

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- Blog: # growthmindsetnurse
- Web: https://growthmindsetnurse.com


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- Dweck, C., Walton, G. M. & Cohen, G. L. (2014). *Academic tenacity: Mindsets and skills that promote long-term learning*. Paper presented at the Gates Foundation, Seattle, WA. Retrieved from: http://web.stanford.edu/~gwalton/home/Welcome_files/DweckWaltonCohen_2014.pdf
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- Mangels, J. A., Butterfield, B., Lamb, J., Good, C., & Dweck, C. S. (2006). Why do beliefs about intelligence influence learning success? A social cognitive neuroscience model. *Social Cognitive and Affective Neuroscience*, *1*(2), 75-86. doi:10.1093/scan/nsl01


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# References


- Williams, C.A.. (2018). Mindsets May Matter in Nursing Education. *Nursing Education Perspectives*, (6), 373. https://doi.org/10.1097/01.NEP.0000000000000267


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| Participants | Theoretical Foundation | Study Design and Intervention | Findings | Implications |
|---|---|---|---|---|
| **Study: Miele, D.B. & Molden, C. (2010) Naive theories of intelligence and the role of processing fluency in perceived comprehension. Journal of Experimental Psychology: General, 139(3), 535-557. doi:10.1037/a0019745** | | | | |
| **67 university students** | Researchers examined progressive challenge and adversity between Fixed Mindsets (FM) and Growth Mindsets (GM) | Intervention: Students completed a mindset survey<br><br>Then they were randomly assigned to read an either incoherent or coherent article and asked take a brief multiple choice exam | As reading assignments became more complex (incoherent), FM students reported lowered comprehension<br><br>GM students, upon reading challenge reported higher levels of comprehension than the FM | FMs fear failure and resisted complexity<br>GMs increased reading comprehension and read more challenging material |

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| Study: Good, C., Rattan, A., & Dweck, C. (2012). Why do women opt out? Sense of belonging and women's representation in mathematics. Journal of Personality and Social Psychology, 102(4), 700-717. | | | | |
|---|---|---|---|---|
| **Nearly 1000 under-graduate students**<br>**534 females and 471 males** | Examined students' beliefs of the math environment as either fixed or growth, their SOB to the math classroom, presence of gender stereotyping in classroom and math interest | Students were asked to complete a series of surveys<br>There was no specific GMI | Students who perceived math classroom as fixed and highly gender stereotypical reported less interest in math and decreased SOB in the math classroom<br>Students who perceived the classroom less fixed, even in a highly stereotypical environment, had increased SOB to the math classroom<br>A SOB to math mitigated both the fixed/malleable classroom perceptions and stereotype perceptions on both women's intention to pursue math in the future and their math grades. | A GM may mitigate gender stereotyping for women in math<br>Creating a sense of belonging to a math classroom is important since it ameliorated both mindset milieus<br>A sense of belonging may be necessary for women to continue to succeed in math |

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| Study: Lee, Y., Heeter, C., Magerko, B., & Medler, B. (2012). Gaming mindsets: Implicit theories in serious game learning. Cyberpsychology, Behavior & Social Networking, 15(4), 190-194. doi:10.1089/cyber.2011.0328 | | | | |
|---|---|---|---|---|
| **233 under-graduates students** | Researchers studied the effects of video gaming and mindset proclivity | Students completed surveys determining their mindset (FM/GM) then played a video game and were monitored for: performance time, experience, and responses to feedback during play | Results suggested that FM players lost attention to the game with mistakes, GM players' attention was not affected by mistakes.<br>Possible that FM participants treated mistakes as signs of incompetence, and self-handicapped loses as lack of attention not lack of ability | GM students were more likely to accept more challenging assignments and pay attention to feedback (remediate) than FMs |

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| Participants | Theoretical Foundation | Study Design and Intervention | Findings | Implications |
|---|---|---|---|---|
| **Study: Burkley, M., Parker, J., Stermer, P. S., & Burkley, E. (2010). Trait beliefs that make women vulnerable to math disengagement. Personality and Individual Differences, 48(2), 234-238.** | | | | |
| **168 female under-graduates at UNC in North Carolina USA** | Researchers, in response to gender stereotyping of women and math, examined females perceptions of math aptitude and mindsets | Non-interventional<br>No GMI | Women who believed their math skills were fixed and immutable showed less math identification and less interest in math tasks than women who believed their math skills were malleable. | GM can mitigate gender stereotype and increase interest in math in women<br>Women who perceived math aptitude as fixed became vulnerable and expressed less likelihood to pursue math in the future |

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| Participants | Theoretical Foundation | Study Design and Intervention | Findings | Implications |
|---|---|---|---|---|
| **Study: Stump, G. S., Husman, J., & Corby, M. (2014). Engineering Students' Intelligence Beliefs and Learning. Journal of Engineering Education, 103(3), 369-387.** | | | | |
| **377 under-graduate engineering students** | Researchers examined ITOI in engineering students and any correlations with grades, approaches to learning, and collaboration | Non-interventional<br>Assessed students ITOI as well as course grades, self-efficacy, knowledge building (deep processing) and collaborative tendencies | FMs expressed less engagement and collaboration while GMs were more engaging in knowledge building (deep processing) and collaboration<br>GM students participated more than FM in active learning and collaboration which was correlated with course grades<br>However, ITOI, did not predict self-efficacy or course grades | Knowledge building and collaboration are key components that lead to academic achievement and in this study, GMs engaged in these practices more than FMs<br>FMs, which did not engage or collaborate, make a dynamic learning community difficult to build leading to less of an educative experience for all students |

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| Participants | Theoretical Foundation | Study Design and Intervention | Findings | Implications |
|---|---|---|---|---|
| **Study: Schroder, H. S., Moran, T. P., Donnellan, M. B., & Moser, J. S. (2014). Mindset induction effects on cognitive control: A neurobehavioral investigation. Biological Psychology, 10327-37.** | | | | |
| **44 college students** | Investigated how ITOI (mindsets) related to cognitive control | Students completed a ITOI survey and fitted to an EEG cap. They were randomly assigned to read either an article about intelligence as a fixed or growth mindset. An EEG recorded their responses to a series of cognitive control exercises | FMs were more concerned about error outcomes and less attention was drawn to adaptive performance<br>GM belief promoted adaptive brain-behavior | Changes in attention and error-processing<br>accompanied perceptions about intelligence and ability and may explain how mindset<br>messages influenced performance and remediation |

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| Participants | Theoretical Foundation | Study Design and Intervention | Findings | Implications |
|---|---|---|---|---|
| **Study: Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2015). The role of implicit theories in mental health symptoms, emotion regulation, and hypothetical treatment choices in college students. Cognitive Therapy And Research, 120-139.** | | | | |
| **388 under-graduates** | Examined how implicit theories of intelligence (mindsets) mediated mental health in college students | Non-interventional<br>Students were asked to complete a battery of surveys which measured theory of intelligence, anxiety, worry, mood, among other factors | FMs experienced more mental health issues and were more likely to suppress emotions<br>GMs were more likely to report fewer mental health symptoms, use cognitive reappraisal more and more likely to choose individual therapy versus medication | Mental health issues present challenges as students transition through school and develop professionally<br>GM students report less mental health issues and transitioned more successfully contributing to academic achievement |

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