Overarching Research Interests

Through the Lens of Universal Design for Learning, what evidence-based practices lead to special education student success? How can evidence-based practices be modeled and implemented into teacher preparation?

**Personalized Pathways for Special Education Student Success (Mason & Hoover, 2019)**

Active Learning Center study in collaboration with Dr. John Hoover, Research Associate Professor at CU Boulder

**Study Overview:** Our study is focusing on students in a mild to moderate resource program working on literacy, math, writing, and self-determination goals in an academic study center implementing direct instruction related to growth mindset.

**Theoretical Framework:** Theories related to Universal Design for Learning (UDL) from research in the learning sciences, including cognitive neuroscience, that guides the development of flexible learning environments that can accommodate individual learning differences (Rose, 2000). Combined with UDL, personalized learning paths where learning is guided by strengths and specialized supports that mitigate student challenges (Bray & McClaskey, 2015; Hoover, 2013). Lastly, growth mindset, the belief that intelligence can be developed through effort and belief in one’s own abilities seeing failure as a natural step in the learning process (Dweck, 2012 & Blackwell, et. al., 2007; Armstrong, 2017).

**Research Summary Table**

<table>
<thead>
<tr>
<th>RQ1</th>
<th>RQ2</th>
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<tbody>
<tr>
<td>What impact does the new Active Learning Center have on selected pedagogy, teaching approaches, and student learning outcomes?</td>
<td>To what extent will an Active Learning Center classroom for special education students personalize their learning and positively impact their academic growth and mindset?</td>
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The proposed quantitative methodology will use personalized learning plan data, growth mindset PERTS surveys (see Mindset Meterⁱ), Steelcase Instrument², and iReady & Aimsweb literacy scores. We will use correlations to examine relationships between variables, and multiple regression to make predictions when variables are present. Proposed qualitative methodology is thematic analysis to determine themes related to mindset and personalized learning for students & teacher.

**Proposed special education impact:** The benefits of including personalized learning and growth mindset instruction to empower struggling learners is projected to positively impact literacy and growth mindset beliefs. Additionally, special education programs can make predictions based on literacy levels resulting in a more strategic continuum of services for students served in inclusion special education models. Lastly, the Universal Design for Learning framework proving impactful in student success will potentially increase UDL awareness and use in collaborative planning between special and general education.

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ⁱ [https://survey.perts.net/](https://survey.perts.net/)

Personalized Learning Data: Year #1 Interim & Ending

Completing 100% of my independent work each week was over 40% in the interim and ending of the year. How can we help students reach that goal? How can they feel more empowered to finish their work independently?

Data source: Weekly Google Form with 4 Canned goals (Working on interventions (<10%), finishing all my independent work (48%), completing quiz corrections to improve my grade (22%) & keeping organized and following expectations (18%).

Growth Mindset: Year #1 Beginning & Ending

Educational impact: direct instruction related to growth mindset as a best practice for high need student populations served in special education and ELD programs

Data source: PERTS Mindset Meter, https://survey.perts.net/ and intervention was direct instruction of GM, Khan Academy GM learning module, teacher language, encouragement of mistake making and classroom culture with daily GM warm up.

Literacy & Math: Year #1 Growth Beginning to End of the Year

Evidence suggests for Year #1 that students who felt more confident, exhibited a growth mindset and were able to successfully finish their independent work…. Went up in their literacy and/or math. How can all students feel empowered?

Data source: iReady for math and reading, benchmark, 3x a year, school used school-wide iReady day model. Interventions used: Wilson Reading (not all students, small group only 2-3 grade levels below level); iReady literacy, and for math, Woot Math, https://www.wootmath.com/.
Year 2: 6th Graders Exhibit High Growth Mindset Scores

We are only one semester into Year 2, with incoming 6th graders, the themes & GM responses so far suggest... Their responses to the “cannot grow your intelligence,” “I belong...,” and highly value, “This class gives me valuable skills...” “If I work hard...” all came back high as growth mindset indicators versus fixed mindset. It would be interesting to see if they continue to feel this way Year 2 in MS, which was the first group of students who had had negative feedback in the way of grades about their performance and ability by 7th grade.

Data source: PERTS Mindset Meter, https://survey.perts.net/ and intervention is warm up journal, IEP goal weekly tracking, mini-lessons on GM, math, literacy, Wilson Reading.

Growth Mindset

Mindset Works

Students succumb to a fixed mindset when they think that their intelligence and talent are set: They are either smart or not, either talented or not. A student who says, "I'm terrible at math" will avoid the subject whenever possible. A student who says, "I'm great at math" will probably not work very hard to improve.

On the other hand, students develop a growth mindset when they realize that intelligence and talent grow through practice, patience, and hard work. Conversely, intelligence and talent grow "rusty" from neglect. Rather than focusing on a fixed level of ability, students with a growth mindset focus on continual improvement.

Carol Dweck of Stanford University defines these beliefs in her book Mindset and shows how they impact learning:

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3 https://www.mindsetworks.com/Science/Default
4 https://k12.thoughtfullearning.com/blogpost/developing-growth-mindset
Fixed Mindset

Wants to **prove** intelligence or talent.

Avoids challenges for fear of failure.

Gives up in the face of tough obstacles.

Avoids hard labor.

Treats criticism as an attack.

Feels threatened by others’ success.

Growth Mindset

Wants to **improve** intelligence or talent.

Engages challenges to improve.

Persists in overcoming obstacles.

Sees labor as the path to success.

Treats criticism as an opportunity.

Feels inspired by others’ success.

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Universal Design for Learning Resources:

**Universal Design for Learning**

“There is no average brain. Variability is the dominant feature of the nervous system. Like fingerprints, no two brains are alike. Each brain is a complex, interconnected web that is sculpted and influenced by genetics and interactions with the environment (p.1)"5

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5 http://www.cast.org/

4 Tara Mason, Ph.D. @drtaramason Western Colorado University CTR: Growth Mindset- Can Students Grow Without it?
Handout, Growth Mindset- Can Students Grow Without It?

You may not control all the events that happen to you, but you can decide not to be reduced by them… Maya Angelou

Today’s Agenda:

1. Overview of UDL & Growth Mindset- If done together... What can we accomplish as special educators?
   Ratings:
   (1) Do students need to be more empowered? ____________ (Response cards)
   (2) Special Education Students must have a growth mindset to persevere in the face of ongoing, consistent failure? ______________ (Response cards)

K-W-L about Growth Mindset (Use a separate piece of paper if needed)

<table>
<thead>
<tr>
<th>What do you already know?</th>
<th>What do you want to know?</th>
<th>What did you learn?</th>
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</thead>
</table>

2. ALC Research Study: Growth Mindset, Literacy & Personalized Learning

Key Takeaways Thus Far:
- Low to Middle on Mindset Meter - they are not moving, why?
- Literacy & Math went up with goal setting + focused GM direct instruction
- Personalized learning goal-what did my students want to work on?
  - Independent academic work + math & literacy interventions
  - What do you hypothesize? A, B, or C? (Response Cards)

3. K-12- What can you do in your classroom and program?

<table>
<thead>
<tr>
<th>Language of Yet &amp; Mistake Making</th>
<th>Explicit Instruction &amp; Ongoing Implementation</th>
<th>School-wide Culture &amp; Teacher Belief</th>
<th>Strategy &amp; UDL</th>
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</thead>
</table>

4. University- What can you do in your teacher prep programs?

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<tr>
<th>High Leverage Practices</th>
<th>Deficit Model Vs. Neuroplasticity Model</th>
<th>Teach Collaboration</th>
<th>Explicit Instruction</th>
<th>Personalize Learning</th>
</tr>
</thead>
</table>

5. Answer our essential Question:

So… Can Students Grow Without Having a Growth Mindset?

5 Tara Mason, Ph.D. @drtaramason Western Colorado University CTR: Growth Mindset- Can Students Grow Without it?
10 What Questions to Develop a Growth Mindset in Children

1. What did you do today that made you think hard?
2. What happened today that made you keep on going?
3. What can you learn from this?
4. What mistake did you make that taught you something?
5. What did you try hard at today?
6. What strategy are you going to try now?
7. What will you do to challenge yourself today?
8. What will you do to improve your work?
9. What will you do to improve your talent?
10. What will you do to solve this problem?
8 Ways to Develop Growth Mindsets

It's what you do, not what you think that matters

by @inner_drive | www.innerdrive.co.uk

Walk the Talk
Do your actions match your words?

Aim For Very Good
Get students to aim for very good, not perfection (as it doesn't exist).

Their Failures
React well to their failures. Teenagers are very aware of your reactions.

Minimize Fear of Failure
Minimise shame and embarrassment when encouraging students to challenge themselves.

Your Own Failures
React well to your own failures. See them as temporary setbacks.

Practical Strategies
Focus on practical strategies students can employ to overcome setbacks.

Avoid Labels
Labels can damage students at both ends of the academic spectrum.

Highlight Multiple Strategies
There are often several ways to get to the right answer.
"IT'S NOT IMPOSSIBLE, JUST HARD."
Western Colorado University

CTR: Growth Mindset- Can Students Grow Without it?
Online Resources:

PERTS
https://www.perts.net/

Khan Academy
https://www.khanacademy.org/partner-content/learnstorm-growth-mindset-activities-us

Personalized Learning- Edutopia
https://www.edutopia.org/article/personalized-professional-development?gclid=EAIaIQobChMI76_C97mX5wIVBNvACh2aQg3uEAAYASAAEgJU9_D_BwE

Steelcase Active Learning Center Grant
https://www.steelcase.com/discover/information/education/active-learning-center-grant/

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