ABSTRACT OF CAPSTONE

Jonathan L. Wilkins

The Graduate School

Morehead State University

April 12, 2022

DEVELOPING A GROWTH MINDSET FOR TEACHERS OF SECONDARY
STUDENTS WITH LEARNING DISABILITIES

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Abstract of Capstone

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A capstone submitted in partial fulfillment of the
Requirements for the degree of Doctor of Education in the
Ernst and Sara Lane Volgenau College of Education
At Morehead State University

By

Jonathan L. Wilkins

Taylorsville, Kentucky

Committee Chair: Dr. Michael W. Kessinger, Associate Professor

Morehead, Kentucky

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DEVELOPING A GROWTH MINDSET FOR TEACHERS OF SECONDARY
STUDENTS WITH LEARNING DISABILITIES

Students with learning disabilities at the secondary level struggle with failure and a diminished emotional capacity to learn. Research suggests that the cumulative effects from the discrepancy model of identification, Learned Helplessness, and learning anxiety may explain the long-standing gap between students with disabilities and their non-disabled peers at the secondary level. The rise of promising academic interventions will unlikely improve students with disabilities achievement until educators address both the emotional and academic to facilitate the student's learning processes. These four modules present a Growth Mindset framework attempting to reverse emotive trends that disincentivize students with learning disabilities in the learning process. Although learning is a multidimensional and very complex endeavor, this professional development series, using Knowles' Adult Learning Theory, creates opportunities for teachers to describe, reflect, and demonstrate how to use Growth Mindset in the classroom environment to overcome the compounding effects of Learned Helplessness, the discrepancy model of identification and learning anxiety for students with learning disabilities at the secondary level.

KEYWORDS: (professional development, Growth Mindset, disabilities, secondary, self-efficacy)

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Candidate Signature

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Date

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STUDENTS WITH LEARNING DISABILITIES

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DEDICATION

I dedicate this paper to my God who has given me both physical and spiritual life and to my family who have endured my hours of reclusive study. Likewise, I am thankful to the multiple professors and teachers who have encouraged me in this endeavor. Finally, to the students who have at times simultaneously frustrated and encouraged me to keep teaching and caring.

ACKNOWLEDGEMENTS

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Executive Summary

What is the core of the capstone?

For over 15 years the motto for the Spencer County School System has been "Going the Distance for ALL students" (2022). This sentiment echoes the national precedent enumerated by over 600 sections within the Individuals with Disabilities Education Act guaranteeing a free and appropriate education to all students (US Department of Education, 2022). Yet despite the best intention of extremely capable educators several long-standing "inequities prevail in the education system" (Boaler & Anderson, 2018, p. 1). The gap between those receiving special education services and their non-disabled counterparts remains consistent particularly at the secondary level (Gilmour et al., 2019). Students identified with learning disability rarely make gains within the general curriculum, which may contribute to poor, post-secondary outcomes.

K-Prep

Students in special education at the secondary level in the state of Kentucky are failing to make adequate progress. The Kentucky Performance Rating for Educational Progress (K-Prep) is an annual summative assessment given in grades 3 through 8, and 10 and 11 in public schools. This criterion-referenced test of accountably covers reading, mathematics, science, social studies, and writing. Students' performance levels are novice, apprentice, proficient and distinguished (KDE DAC Information, 2022).

According to the 2021 Kentucky School Report Card, 8.4% of high school

students with disabilities in the 2019-2020 school year were able to score at or above

the state benchmark in mathematics while 35.3% of their non-disabled peers were

able to meet or exceed the benchmark (Table 1). This registered a 26.9% difference

in performance in mathematics between students with disabilities and their non-

disabled peers at the high school level. In that same year, 16.6% of students with an

Individualized Education Program (IEP) were able to meet or exceed the state's

expectation in reading while their non-disabled counterparts achieved 44.5%

proficiency and beyond. The difference in achievement was 27.9%.

Table 1

*Proficient and Distinguished High School Students for K-Prep Accountability for
Kentucky High Schools and Spencer County High School in 2019-2020 for Students
with and without Disabilities (percent)*

State of Kentucky				Spencer County High School			
Math		Reading		Math		Reading	
With	Without	With	Without	With	Without	With	Without
8.4	35.3	16.6	44.5	11.5	46.1	28.6	64.2

Although Kentucky's student performance in mathematics and reading has

generally improved over the past few decades, there has been very little progress in

closing the achievement gap between students with disabilities and their non-disabled

peers. Instead, this gap has widened (Lewis, 2019).

At the district level, Spencer County High School shares this same struggle as

the state. Table 1 lists the results from the accountability K-Prep scores. In 2019-

2020 (School Report Card, 2021), math students without disabilities met and exceeded the state benchmark of rating proficient or distinguished by 46.1%, while only 11.5% of students with learning disabilities were able to meet and exceed the same standard. In reading, 28.6% of students, receiving special education services, were able to score proficient and distinguished while the non-disabled population reached 64.2% proficiency and distinguished ratings.

ACT

The previous five years of Spencer County High School ACT scores documents this longstanding achievement gap and similar pattern of performance. Unlike scores in 2019 to 2020, previous accountability scores in reading and mathematics at the secondary level were based on ACT results. The ACT is a college emissions exam mandated by the Kentucky Department of Education for students in the 11th grade. This test measures the college readiness of students and is required as part of Kentucky's accountability system for schools. This test covers four areas: English, mathematics, reading and science (KDE DAC Information, 2022). The state's mean passing rate of non-disabled high school students in mathematics for the previous five years (2014 to 2019) was 35.9%, while students with disabilities was 9.0 % or a 26.9% gap between both groups (see Table 2). In reading during the same period, the mean percentage of those who scored proficient or distinguished was 46.2% while their non-disabled counterparts were 17.9% or a gap of 28.3%.

Table 2

Proficient and Distinguished on ACT for Kentucky High Schools and Spencer County High School with and without Disabilities (percent)

| | State of Kentucky | | | | Spencer County High School | | | |
| | Math | | Reading | | Math | | Reading | |
Year	With	Without	With	Without	With	Without	With	Without
2015	10.8	38.1	19.9	47.4	10.3	34.6	13.8	47.8
2016	10.1	39.7	16.9	49.2	24.0	34.3	40.0	46.8
2017	9.6	43.7	13.7	53.2	3.4	37.2	20.7	53.3
2018	7.2	29.8	14.7	45.4	11.8	46.0	27.6	67.7
2019	7.3	28.0	24.1	35.9	11.5	46.0	28.6	54.2
Mean	9.0	35.9	17.9	46.2	12.2	39.6	26.1	56.0

According to the National Center for Education Statistics, an achievement gap occurs, "when one group of students outperforms another group and the difference in average scores for two groups is statistically significant" (Methodology Studies, 2021, p. 1). These results demonstrate a longstanding achievement gap across the Commonwealth of Kentucky between students with disabilities and their non-disabled peers at the secondary level.

District data from ACT scores shows that nondisabled peers achieved a mean of 39.6% proficiency or distinguished in math while students with disabilities only achieved a mean of 12.2% in five years' time. This is a difference of 27.4%. In the area of reading, non-disabled peers reached a mean of 56.0% proficiency and distinguished in five years, while only 26.1% of students with disabilities thereby creating a differential of 29.9%. These numbers illustrate the continuance of a gap in performance between those with and without disabilities.

NAEP

The state and local trends mirror national trends. The National Assessment of Educational Progress (NAEP) provides important information about student achievement and learning experiences in various subjects. Also known as, The Nation's Report Card, NAEP has provided meaningful results to improve education policy and practice since 1969. Results are available for the nation, states, and 27 urban districts (About NAEP, 2021).

According to Bouck et al. (2017) students with learning disabilities are making inadequate progress through current classroom instruction. Hurwitz et al. (2020) found that on average students with disabilities scored three years below their non-disabled peers on math and reading standardized assessments.

Table 3

NAEP Mean Scores for Students in 12th Grade

Year	Math		Reading	
	With	Without	With	Without
2015	114	153	244	289
2016	120	156	253	291
2017	119	157	252	292
2018	118	155	252	291
2019	119	154	252	290
Mean	118	155	250.6	290.6

The Nation's Report Card published by the National Assessment of Education Progress (NAEP, 2021), demonstrates this same phenomenon at a national level. Table 3 displays the past five cycles of a representative sample of students across the

country in the 12th grade, who were assessed in reading and math. In math, those

without disabilities had a mean score of 155.0, while those with disabilities had a

mean score of 118.0. This registers a difference of 37.0. In reading, those without

disabilities scored a 290.6 mean while those receiving special education services

scored 250.6 or a difference of 40.0. Therefore, a long established and ongoing gap,

exceeding 35 points in both math and reading scores, continues between students with

disabilities and their non-disabled peers at the national level.

Lack of Growth Mindset

Teachers have observed that students with learning disabilities are not making

sufficient gains as their non-disabled peers (Gottfried et al., 2019). Although

academic data reveals this discrepancy, the issue and its remedy are not academic

alone. Educators must not only provide interventions that address academic failures

but also work to remedy the emotional impact that may underline the lack of

achievement in students with learning disabilities. Previous research has shown that

Growth Mindset has benefited many low achieving students (Sarrasin et al., 2018;

Sisk et al, 2018). Dweck (2016) defines Growth Mindset as a belief or disposition

that your "basic qualities are things you can cultivate through your efforts, your

strategies, and help from others" (p. 7). Although there is a large body of research on

Growth Mindset, much of the research has focused on cognitive performance at the

elementary level (Rittle-Johnson et al., 2016). There has been limited application

addressing the implementation of Growth Mindset practices for high school students

who have learning disabilities.

Research reveals that a teacher's mindset may either limit or improve a student's academic performance in the classroom (Gutshall, 2013). Growth Mindset is often characterized by a student using varied and deeper study strategies for learning (Ehrlinger et al., 2016), while seeking out challenges without fear of labels or failure (Sevincer et al., 2014). Students who hold fixed mindsets believe they have limited power to learn and tend to have lower expectations for themselves (Rattan et al., 2012). Dweck (2016) defines fixed mindset as a belief there is "only a certain amount of intelligence, a certain personality, and a certain moral character" (p. 6) which affects every area of life and especially academics.

Context of the Study

Spencer County High School is a rural, bedroom community outside the Louisville-Metro area. In 2020, Spencer County High School had 967 students, 137 or 14% who were receiving special education services. As a Title I school with 44.7% of students receiving free and reduced lunch, it is the county's only high school. In 2019-2020 there were 52 teachers employed in the high school. The teacher to student ratio was 18 to 1 (School Report Card, 2021). At that time there were seven fulltime special education teachers, the majority of whom held a learning and behaviors certificate while two were certified to teach moderate and severe disabilities. The school served 137 students with disabilities with 13 students in a self-contained room while 124 students or 89% of these students receive special education services in the general education classroom. A glance at Table 4 quantifies the eight designations of special education services at Spencer County High School.

The largest was specific learning disabilities which included 50 students or 37.3%.

The second largest category was Other Health Impairments which was 45 or 33.5%.

Table 4

Spencer County High School Students with Disabilities with an Individualized Education Plan 2020-2021

Category	Number	Percentage
Autism	6	4.5
Emotional Behavior Disability	7	5.2
Functional Mental Disability	4	3.0
Mild Mental Disability	15	11.2
Multiple Disability	6	4.5
Other Health Impaired	45	33.6
Specific Learning Disability	50	37.3
Total	134	99.3*

Asterisk (*) indicates insufficient data regarding students receiving speech therapy

Statement of Problem

According to Al-Yagon (2016), students with learning disability are at a greater risk for depression and anxiety as compared to their non-disabled peers. Although schools are required to hire teachers who may be considered highly qualified, with years of experience and equipped with research-based teaching strategies, students in special education are failing to make progress (Podolsky et al., 2019). Since students' perception of their own ability to learn affects their academic performance, teachers must use language and instructional methods that address academic and the emotional effects of learning anxiety, the discrepancy model of identification for special education services and Learned Helplessness. Growth Mindset is a promising theory that may overcome students' lack of prior

achievement, perception of their own ability to learn, while driving quality instruction, which addresses both students' academic and emotional needs.

Zhao et al. (2018) found that learning motivations can be improved when teachers teach from a Growth Mindset. It is this Growth Mindset which helps students embrace struggle while reversing the negative impact of Learned Helplessness (Boyd & Ash, 2018). This persistent gap in students with learning disabilities at the high school level is chronic and merits thoughtful planning on the part of classroom instructors and educational leaders. Classroom practitioners must occupy themselves with the goal of equipping students with disabilities with emotional motivation as well as academic proficiency.

Purpose of the Capstone

This project is intended to capacitate teachers to improve student performance through the adoption of a Growth Mindset framework using four targeted training modules. These training modules could be completed in four sessions during the school district's professional development days before the opening days of school. The curriculum and content could supplement the district's teachers' academy for new teachers or could serve as a series of sessions during the district's learning summit in the summer. The district summit is an annual professional development (PD) for Spencer County employees provided by employees who serve in the district. The intent is to provide individualized, quality-learning experiences that will affect the instruction in classroom by knowledgeable and experienced peers. The sessions occur on a district PD day and are divided into five sessions at one central location.

Each module provides a means for teachers to improve their own understanding of students with learning disabilities, while assisting this population of students to realize their own academic and emotional potential.

This capstone project may be easily replicated with minimal expense to the school or district while counting for continuing educational credits. The capstone considered two questions:

- What would be the purpose of the professional development series to high school teachers to develop a Growth Mindset in students with learning disabilities?

- How can the premise be effectively delivered to adult learners in a series of four modules?

Literature Review

The literature review examines reasons why students with learning disabilities struggle and discuss how Growth Mindset reverses some of the emerging trends, which may narrow the longstanding achievement gap at the secondary level. These may be summarized under three section headings, the discrepancy model of identification, Learned Helplessness, and learning anxiety.

Discrepancy Model of Identification

Some researchers have suggested that the current identification process for students with learning disabilities is flawed. Strauss (2019) claims that special education follows a medical model that "pathologizes disability" (p. 1) and is driven

by the understanding that teachers in this field must "fix" these students (p. 1).

Lambert (2018) concurs with this assessment and agrees that this medical model

simply focuses on finding and remediating cognitive defects. These statements

reignite the age-old nature versus nurture controversy. Although most would agree

that it is a combination of both arguments, this model of diagnosis implies a premise

that these students are damaged, and learning is beyond their control.

One of the adverse effects of the medical model of special education

identification is that it produces a label that may define and limit that individual for

the entire course of their academic career (Austin & Pisano, 2017). Osterholm et al.

(2000) completed a meta-analysis of 34 studies from 1970 to 2000 investigating the

effect of labeling students with learning disabilities. They found these diagnostic

labels negatively impacted the students, especially when staff failed to take steps to

safeguard against these damaging effects in the classroom and among peers. These

consequences have included negative peer interactions, which include bullying or

withdrawal along with a variety of emotional issues such as depression, substance

abuse, and a lower self-concept (DeVries et al., 2018).

Learned Helplessness

Another of the issues confronting the secondary teacher in an inclusive

classroom is Learned Helplessness. This extreme form of disengagement is a concept

that sees students' academic failure as part of the conditioning they have received in

the classroom (Dweck, 1975; Mueller, 2005; Yates, 2009). Studies have shown that

when students fail to believe in their chances of success they just give up (Acka,

2011; Gothsall & Stefanou, 2011; Maier & Seligman, 2016). High levels of Learned

Helplessness appear in students with learning disabilities, which accounts for their

low effort, low expectations, and lack of hope (Hen & Goroshit, 2014).

Recent studies in neuroscience reinforce the notion that Learned Helplessness

is far from being a perpetual biological anomaly in which students are helpless.

Taylor et al. (2014) demonstrated that learning helplessness occurs in the region of

the brain that affects cognitive and emotional functioning and shares many of the

characteristics of depression and post-traumatic stress disorder (PTSD), and that

cognitive therapy can reduce this affect. PTSD is a distinctive psychiatric condition

which "requires an etiologic event—traumatic exposure" (Hyland et al., p.134). The

literature has shown that learning helplessness is not uncommon at the secondary

level with those students identified as having learning disabilities.

What may have been interpreted by secondary teachers as defiance or

obstinate behavior may be a series of ongoing negative experiences convincing the

student with disabilities there is nothing they can do to change this lack of

achievement. Although neurological research has shown that learned behavior is

reversible with targeted interventions, there are few studies that have considered

Growth Mindset effects on students with learning disabilities. Instruction based on

Growth Mindset principles may prove effective in restoring this loss of control so

characteristic of Learned Helplessness with high school students in mathematics.

Learning Anxiety

Another significant barrier to learning for students with disabilities is learning anxiety (Buckley et al., 2016). This has been defined as an "abnormal sense of fear or nervousness" (Akca, 2011, p. 108). Researchers have found that this disorder affects students as young as seven and may continue into their adult life (Ramirez et al., 2018). Boaler (2015) categorizes this type of anxiety, just as in Learned Helplessness, into three domains—behavioral, cognitive, and emotional.   Students with learning disabilities report higher levels of stress and anxiety and lack of self-efficacy more than most of their non-disabled peers (Hen & Goroshit, 2014). Rubinstein et al. (2015) used a visual computer latency probe and mathematics anxiety questionnaire to quantify the cognitive effects of learning anxiety on student proficiency. The value of these experiments showed what was previously considered non-threating stimuli may trigger severe avoidance behaviors that are of the same quality of those who have a phobia of snakes or spiders.

Learning anxiety affects students with learning disabilities both emotionally and cognitively. These negative effects compromise a student's belief in the possibility for achievement. Interventions that target academic gaps alone fail to address the two core issues which are non-academic in nature—stigmatization from learning labels, Learned Helplessness, and learning anxiety.

Growth Mindset

Teachers possess the ability to assist students with learning disabilities cope with these negative results garnered from the discrepancy model of identification,

Learned Helplessness, and learning anxiety. Research has demonstrated that a sturdy and secure student-teacher relationship tends to encourage students with learning disabilities to direct their attention and energy towards learning and increasing positive, social interactions (Al-Yagon, 2016). The advantage of a Growth Mindset is that it seeks to address both achievement motivation and academic performance in high school students with learning disabilities. Growth Mindset is the belief that intelligence is malleable and improves with perseverance through mistakes and risk taking (Dweck, 2016). This theory is often equated with an incremental intelligence theory and is often based on an individual's self-efficacy (Blackwell et al., 2007). Mouratidis et al. (2017) studied the implicit theory of ability on high school students' autonomous functioning, procrastination, and academic achievement. It was found that students with a fixed mindset were less likely to expend efforts to attain a goal they believed was unobtainable while those with a Growth Mindset were more likely to expend the effort. Researchers have based their work on previous studies where students tended to demonstrate persistence, thrive on feedback, and maintain a desire for improvement even through failure which is characteristic of the Growth Mindset theory (Blackwell et al., 2007; Dweck, 2016; Rhew et al., 2018).

Growth Mindset suggests that motivation and effort, despite the limitations of working memory, may improve task performance (Seitchik & Harkins, 2015). According to Schroder et al. (2017), Growth Mindset is an effective counter to those "classified as helpless" (p. 42) and fail to give effort towards task completion and improvement. As Dweck (1975) wrote in her study, "If a child believes failure to be

the result of his lack of ability or the result of external factors beyond his control, he is unlikely to persist in his efforts" (p. 683). Growth Mindset therefore targets this Learned Helplessness by aiming at its chief cause, the loss of control and blame on external factors. For academic changes to occur there must first be a motivational shift that precedes it.

Summary

To narrow the longstanding achievement gap among students with learning disabilities, teachers should develop and incorporate Growth Mindset theory in teacher-student relationships and classroom instructional practices. These techniques were promising research-based practices compiled to capacitate secondary teachers as they helped students with learning disability reverse some of the common and unhealthy emotional trauma related to the discrepancy model of identification, learned helpless and learning anxiety. The four professional development modules designed for this capstone address the need, means, and the methods necessary to create a culture of learning by transforming students from passive and indifferent learning into active and resilient learners who grew to achieve.

Who is the capstone meant to impact?

The professional development series targeted students with learning disabilities at the Spencer County High School. Student growth and achievement remains the focus of the Spencer County High School. The pressing need to address this long-standing gap between students with disability and their non-disabled peers was the impetus for this capstone project. Only as students develop their self-efficacy

can they begin to regain the locus of control that is essential for student achievement. Ultimately, the aim of this project was to build their capacity and personal empowerment.

Secondly, this capstone was designed to impact the teachers at Spencer County High School. According to Hattie (2018) the greatest effect size to student achievement has been teacher collective efficacy. Voelkel and Chrispeels (2017) defines this quality as the teachers' own belief in their own ability to influence the outcomes in students' lives. Not until teachers realize and embrace their unique roles, will students begin to believe in themselves. According to Bandura's (2001) Social Cognitive Theory, learning is a social phenomenon that is highly relational. Although students, identified as having special needs, may lack many supports or assets that may be common among their achieving counterparts, there is a plethora of research demonstrating the power of one caring adult in the life of a struggling student (Romano et al., 2021; Roorda et al., 2011; Ruzek et al., 2016).

The positive impact of Growth Mindset professional development would influence 14.2% of students within the Spencer County High School. When implemented at the district level, the impact would affect 17.8% of students with learning disabilities who compose the entire student population, which consists of two elementary schools, one middle school, one high school, and one alternative school. Ultimately the change in classroom and school climate would eventually impact the school, district, and community culture as students make academic and emotional gains.

This program would be a proactive approach to improve teacher-student relationships. When teachers help students foster the capacity to learn, it creates a powerful learning community. Rather than perceiving the teacher as a mere enforcer, students will begin to see teachers as a trusted partner and supporter in the learning process. Trust, communication, and personal growth create rewarding relationships that improve the climate and culture of the school (Mahoney et al., 2020; Septiani et al., 2019).

How was the capstone project implemented?

As a professional development for high school teachers, these modules were primarily designed for classroom teachers before the beginning of the school year to influence teacher planning and instructional practice in relating to students with disabilities. Evaluation and accountability are embedded within the modules through a series of formative discussions, active learning practices, and cooperative small group learning. Charts may be used as rubrics and guidelines to cultivate personal responsibility, communicate expectations and produce accountability that may be nested within a professional learning community or academic department.

Although Growth Mindset has been present for many years, teachers have struggled translating a well-researched theory into a pedagogy suitable for day-to-day instruction (Seaton, 2018). Based on Knowles' Theory of Adult Learning, teachers remain the content specialists who possess the acumen necessary to effectively construct sound instructional practices based on individual, corporate, and curricular needs unique to the teacher's distinctive classroom setting. These modules exist to

energize teacher capacity as they in turn empower students with learning disabilities to deeper levels of metacognition.

Although the capstone was designed for one day of professional development, it may be adapted for ongoing professional development through a professional learning community. Discussion and scenario-based problem solving have been integrated in each module to allow teachers to actualize their expertise and experience while contributing to a collective discussion with fellow professionals. Not only does this build individual capacity but enhance the teacher collective efficacy while creating a strong network of associates who can give ongoing support in the application of these Growth Mindset principles.

Why was this capstone and related strategies selected?

Currently most Growth Mindset interventions do not target students with disabilities and merely teach Growth Mindset as a novel concept about brain growth and the power to change (Blackwell et al., 2007; Claro et al., 2016; Yeager et al., 2014). Growth Mindset theory needs to take the next evolutionary step and imbed those Growth Mindset principles into a teaching framework that improve and cultivate a Growth Mindset in students as teachers instruct. The capstone, based on the social cognitive theory, seeks to cultivate a Growth Mindset in teachers which could impact practice and increase student achievement at the high school level for students with learning disabilities.

Many students, especially students with disabilities, need adults who provide the skills necessary for them to succeed. This professional development series sought

to synthesize and organize Growth Mindset research-based practices into four modules for this teacher professional development series benefiting students with learning disabilities.

When was the capstone implemented?

The purpose of the capstone was to capacitate teachers as they cultivate a Growth Mindset in students with learning disabilities at the secondary level. To create an optimal learning environment, the researcher identified certain impediments from the literature that tends to demotivate students with learning disabilities and identify a theory that addressed those cognitive and emotive barriers. These barriers were compiled into a literature review in the fall of 2021. By the winter of 2022, several key, research-based strategies were condensed into four modules to influence a teacher's classroom efforts and ultimately impact students with learning disabilities at the secondary level.

Impact of the capstone

This capstone allowed the researcher to conduct a review of literature about students with learning disabilities and applied Growth Mindset theory within the general curriculum. It was discovered that rather than telling students to improve (direct instruction), teachers had to create conditions that nurtured emerging capabilities for students with disabilities. Although there have been a variety of promising research-based interventions, these programs rarely deal with the underlining emotions that drive student performance. From the literature it was

discovered teachers have the potential through Growth Mindset to provide instruction

that is increasingly rigorous, relevant, and relational (Morehead, 2012).

Often teachers and students suffer from lower expectations, which mirror

Dweck's (2016) description of a fixed mindset. These lower expectations were found

to impede learning and promote a compliance mentality rather than competency-

based approach (Cavendish & Connor, 2018). For students at the secondary level,

this became a "culminative disadvantage" limiting outcomes (Shifrer, 2013, p. 462).

Culturally responsive and relevant teaching occurs when instruction is

targeted and intentional (Barrio et al., 2017). Diagnostic feedback practices rather

than letter grades or check marks, tend to make learning relevant and foster a Growth

Mindset. Likewise, mastery learning practices requires selectivity and specificity

instead of simply forging through volumes of information mandated by a curriculum

guide.

Finally, the formulation of this capstone revealed the centrality of

relationships. Growth Mindset is a transmutable quality that comes through

personality even if it is unintentional (Cutumisu, 2019). Bandura's social cognitive

theory asserts that students learn by imitation (Bandura, 2001). This capstone

advances the premise that teachers with Growth Mindset promote Growth Mindset in

students.   Conversely, it is equally true that teachers with a fixed mindset project a

fixed mindset onto their students.

Limitation of the Capstone

This capstone was developed by a teacher primarily for teachers who work with students with learning disabilities. As a teacher who has witnessed the frustration of students with learning disabilities in his classroom, the intention was to create a learning series for fellow teachers who share the same desire to see students with learning disabilities achieve. According to Mitchel (2019), only one in five teachers feel preprepared to support students with learning disabilities in the classroom. However, the suggestions from this capstone may lack the perspective of seasoned administrators who have mastered the systems approach required at a building or district level of leadership.

Likewise, the author attempted to synthesize current and practical research based on the perceived needs of students with learning disabilities. However, this statement betrays the very margins and limits of the author's own experience within his own place of practice. As a classroom practitioner in a rural Kentucky high school, some suggestions may not fit well or contextualize in other secondary schools with a variety of unrelated variables.

The capstone suggests applying these methods at the high school level but holds promise for those who instruct at the middle school and elementary schools and may be adapted for instructional programing across the district level. Once again, the author of this capstone has never held an administrative position at the building or district level. The application of these principles and learning strategies may require modification to be effective.

Finally, this professional development series should not be considered a medical intervention but ultimately academic. Although the capstone contains references to medical issues or therapeutic terminology, the author has no medical or psychological training. Students with learning disabilities have a variety of needs, and this learning series does not pretend to serve as the panacea for the emotional and academic concerns of students with learning disabilities. The scope of such issues is so wide that there is no one resource that could possibly provide solutions to such complex and overlapping issues. The author's best hope was to merely record, codify, and generate discussion from fellow educators that might promote collaboration which allows for academic and emotional improvement for our high school students with learning disabilities.

Overview of the Modules

The four training modules cover the need, theory, and application of Growth Mindset for students diagnosed with learning disabilities. The four lessons will gradually build to outline possible techniques and scenarios that allow classroom practitioners to participate and individualize Growth Mindset for their own classrooms and content areas.

Module One

The first module answers the question, "Why?". According to Tainsh (2016), Knowles' theory of adult learning requires a clear and practical purpose for learning new material. This module covers the observed and common academic and emotional issues confronting secondary teachers who instruct students with learning

disabilities. The topics include discussions on learning anxiety, the discrepancy model of identification, and the negative impact of years of Learned Helplessness. It will be shown how the combination of these issues erodes the confidence and participation necessary for active learning for students with learning disabilities.

Module Two

The second module explores the question, "How?". Since the first module gave stakeholders reasons to be concerned with emotional trauma of students with learning disabilities in the secondary classroom, the second module gives contemporary research on the most promising methods regarding Growth Mindset. Research was compiled to demonstrate how Growth Mindset reverses Learned Helplessness and builds emotional and eventual academic capacity in students with learning disabilities.

Module Three

This module discusses the personnel or members of the school environment who can promote a Growth Mindset among students with learning disabilities. Participants will discover how research indicates that teacher belief and behavior are influential factors that have the power to improve students' perceptions of their own learning. Based on Bandura's (2001) social cognitive theory, students respond to teacher cues and expectations about students' potential to learn material. The module will outline how language and instructional practices promote a Growth Mindset in students with learning disabilities. The module provides illustrations and tools that

should generate meaningful conversations through scenario-based discussions with teachers in the professional development series (Moore, 2019).

Module Four

The final installment provides suggestions on how teachers can begin to implement a Growth Mindset pedagogy within a classroom naturally or examine the means or what teachers must do to inculcate a Growth Mindset. This lesson combines some of the promising time-based strategies for covering information to students such as scaffolding, gradual release, and reflective-based learning exercises (Mcvee et al., 2019). Unlike previous Growth Mindset research, this module does not focus on teaching students' reasons why the brain changes, but incorporating practices that emphasize process over outcome, making mistakes, and students learning how to get unstuck (Steurer, 2018). This module provides a suggested grading or feedback practices which help foster a Growth Mindset in students with learning disabilities to augment these students' intrinsic motivation (Ng, 2018).

Reflections

Personally, this capstone has challenged my own beliefs about innate and acquired intelligence. Unexpectedly I discovered my own penchant to view students with disabilities as limited and fixed in their abilities. We are all prisoners of our own experiences. This research has challenged those assumptions and cultivated an awareness of the impact of my own mindset on the students I am privileged to interact with daily. One of the most startling metrics, revealing my own personal

deficiency, was a growing awareness of fixed mindset language revealed by a rubric featured in Module 2.

As a teacher, synthesizing this research has permitted me to experiment and to integrate Growth Mindset theory in my own teaching experience. The involvement in this project has modified my own teaching techniques especially in formative assessment and diagnostic feedback with students. Additionally, it has provoked meaningful dialogue with other experienced colleagues in the effort to understand and describe the effects of mindset on the students with learning disability. During these conversations with educational practitioners, I have discovered an ongoing interest in how to motivate and effectively engage students with learning disability in the general curriculum at the secondary level. These experiences have confirmed, anecdotally, my suspicion that this professional development series begins to satiate a long-standing interest in helping students with learning disabilities.

As I reflect on the scope and significance of this capstone, I find it has merely laid a foundation for personal and professional improvement. Future research should gather and review data such as behavioral referrals, student attendance, and grade point average to determine what impact this professional development series has on students with learning disabilities. Education must be pragmatic and ultimately requires results.

Additionally, this professional development series may be expanded by offering ongoing and periodic support through the course of an academic year as it is embedded in a professional learning community. According to Zemelman et al.

(2012) promising initiatives in a school or district tend to fail given a short duration

and lack of continuing support. Change and mastery are never immediate but require

ongoing review. A framework built on these four modules may be easily created and

used to guide collaborative discussions and assessment practices among teachers for

students with learning disabilities within the context of a professional learning

community.

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APPENDIX

Developing a Growth Mindset in Students with Learning Disabilities

Module 1

The Motivation in Adopting a Growth Mindset

Based on Knowles' four principles of andragogy (Pappas, 2021), adult learners are interested in learning about something that impacts their work. This module answers the question, "Why should teachers embrace a Growth Mindset framework for students with learning disabilities?". It outlines how Growth Mindset theory addresses three emerging and ongoing difficulties connected with learning disabilities in the secondary classroom. In accordance with Knowles' adult learning theory, the content is problem-centered rather than content driven (Pappas, 2021). This module is first in order because it is foundational to the entire series.

Module 1

Title: Motivation: What is and why should we embrace a Growth Mindset framework for students with learning disabilities?

Time: Approximately two hours in length

Terminal Learning Objective: The participant can generalize three factors that contribute to the lack of achievement among those identified as learning disabled at the secondary level

Learning Objectives:

- Define learning disabilities and how it impacts student performance

- Understand that learning disabilities are increasing

- Create a metaphor that synopsizes learning disability

- Assess the underlining causes of ongoing lack of achievement

- Role play Learned Helplessness

Materials:

- Presentation software and television

- Handouts with anagrams

- Timer for activities

- Whiteboard for outlining discussion points

Activities:

- Small group and whole group discussions

- Interactive demonstration
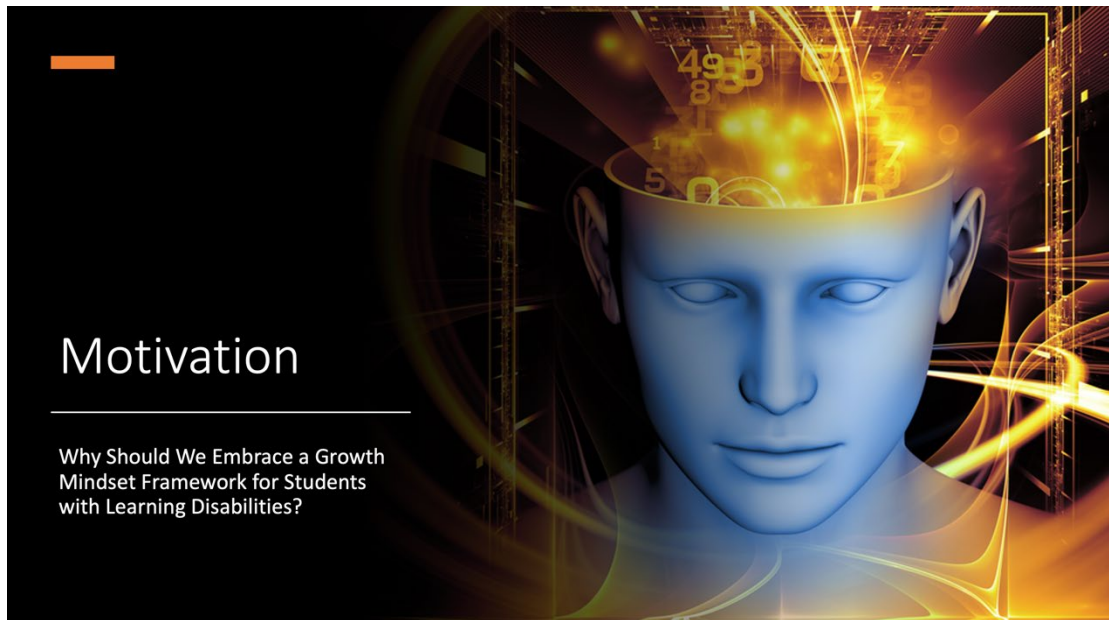
Script: The instructor will need to welcome teachers to this professional development and explain that the content will cover Growth Mindset and why it is important for teachers to embrace this theory when teaching students with learning disabilities. The scope of this professional development series will deal with suggested reasons why students identified with learning disability struggle; how Growth Mindset can work to reverse non-academic trends, how teachers have the capability to regulate a learning environment that help students and suggest Growth Mindset methods teachers can implement in the classroom.

Motivation— Why We Embrace a Growth Mindset

Terminal Learning Objective: The participant can identify three factors that contribute to the lack of achievement among those identified as learning disabled at the secondary level.

Time: Two Hour Lesson

Materials Required: Presentation

Script: In these modules teachers will be acquainted with the ongoing learning gap that exist between those labeled as learning disabled and non-disabled peers despite years of money, research, and intervention. Additionally, the module will discuss the definition of learning disability and the growing numbers of those identified with this disability. Finally, attendees will be introduced to three non-academic issues that directly impact classroom performance and contribute to the persistent academic gap between those with learning disabilities and their non-disabled peers.

The module will also integrate several individual and collective learning strategies to help participants internalize the lessons contained in this module. Discussions will allow teachers to combine their expertise and experience enhancing the impact and collective efficacy of this professional development series.

Learning Disabilities?

"Learning disabilities may be defined in practical, medical and legal terms. The common theme in all three definitions is that a learning disability is a disorder in one or more basic psychological processes that may manifest itself as an imperfect ability in certain areas of learning, such as reading, written expression, or mathematic" (Learning Disabilities Association of America, 2021).

Script: Teachers sometime struggle with understanding the definition and scope of learning disabilities. According to the Institute of Neurological Disorders (2021), learning disabilities include a student's difficulty with spoken or written language, completing mathematical calculations, coordinating movements, and focusing attention. The Individuals with Disabilities Education Act (IDEA) uses this same language when it defines those with specific learning disabilities as having "one or more basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think speak, read, write, spell, or do mathematical calculations" (20 U.S.C. Section 1401, 30).

The commonality shared between these definitions involves a difficulty in processing information and is a disorder that has a negative impact on learning. The term learning disabilities is a broad term that may include difficulties in mathematics,

reading, and writing (Learning Disabilities Association of America, 2021). For teachers at the secondary level, this population of students is increasing and compels both general and special education teachers to consider how best to serve those students identified as having a learning disability.

Figure 1. Percentage distribution of students ages 3–21 served under the Individuals with Disabilities Education Act (IDEA), by disability type: School year 2019–20

Disability type

Disability type	Percent
Specific learning disability	33
Speech or language impairment	19
Other health impairment[1]	15
Autism	11
Developmental delay	7
Intellectual disability	6
Emotional disturbance	5
Multiple disabilities	2
Hearing impairment	1
Orthopedic impairment	1

Percent

Script: In 2020, 14 % of all public-school students were considered Special Education (NCLD), however that classification includes 13 different categories of which learning disability is only one. In 2017 the National Center for Learning Disabilities recorded the highest subgroup receiving special education services was emotional behavioral disorder. But, there has been a recent shift. In 2019 the most common category of disability (33%) was specific learning disabilities (NCLD). This signals the reality that general education teachers will be confronted with students who have cognitive disorders that directly impact learning in the classroom which require a shift in learning strategies.

Script: This is an individual activity. According to Harvey et al. (2013) metaphors and images are powerful descriptors that help identify the realities and perceptions to which people cling. The goal of the activity is to provide thoughtful consideration and reflection on our internal bias—both positive and negative when considering learning disabilities. The choice of a metaphor will help teachers identify mindset.

Once teachers have a few minutes to ponder and share their metaphor, then the screen will show the image of a traffic jam. Siwek's (2009) metaphor will be explained as follows: The brain sends information through neuron-transmitters called synapses. These roadways get crisscrossed and there is a traffic jam. The problem is not the road or the cars but the surge of information that struggles to make it on time. The problem is processing or the ability to recall what has been retained. Teachers must help these students find alternate routes to recall and demonstrate mastery.
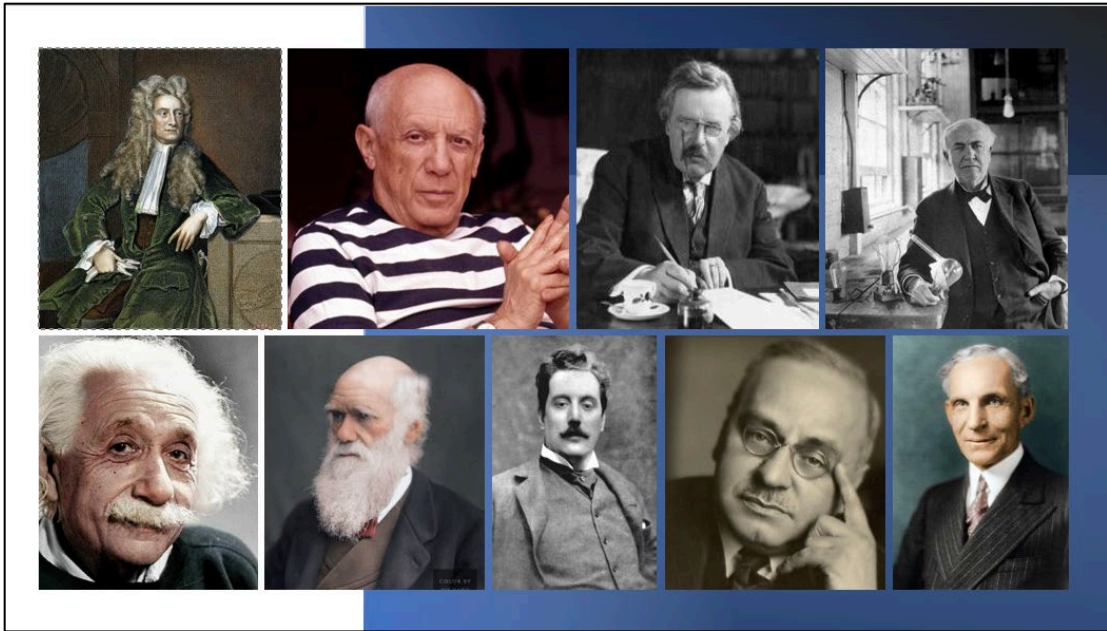
Script: The instructor can show these pictures and ask the attendees to identify any

of the famous people they recognize. After the staff has exhausted their resources,

the instructor can then ask what all these individuals had in common although they

are from different walks of life and lived during different periods of time. Nicoll

(2014) found that (in order top left to bottom right) Isaac Newton, Pablo Picasso,

Gilbert Chesterton, Thomas Edison, Albert Einstein, Charles Darwin, Giacomo

Puccini, Alfred Adler, and Henry Ford were labeled by educators as "inept,

unmotivated, or unintelligent students" (p. 51).   The conclusion is that those with

learning difficulties are not stupid or have an inability to learn and succeed, they just

had to find an alternate way to overcome.

Script: Butrymowicz and Mader's (2020) research estimates that nearly 90 percent of secondary students with learning disabilities can graduate and successfully pursue post-secondary outcomes which include college. The primary impediment is not the student's ability but the lack of adequate support. These researchers found the average graduation rate for students with disabilities in 2020 was 67.1% which is 17.5 percentage points lower than the 84.6% rate for all students graduated in the United States. It is this persistent inequality, performance gap that often emerges in kindergarten classes and continues until a student's senior year that leaves educational practitioners and strategic leaders asking, "Why?" (Garcia & Weiss, 2017).

Instruction: Before providing possible answers based on the research, the presenter should pass out half sheets of papers prepared beforehand to the class. Roughly half the class will receive a sheet of paper that include the words, BAT, LEMON, CINERAMA. The second half of the class will receive the words, WHIRL, SLAPSTICK, CINERAMA.

Script: We need to understand why students with disabilities struggle. I would like for you to complete a simple assignment. I will give you a sheet of paper and then have you rearrange the words into another word called an anagram. We will do them together. Let's begin. Turn your paper over and rearrange the words and when you are finished, please raise your hand. Now let us complete the second word, once again raise your hand when you are finished. Okay let us try the third word together.

Some of you struggled with the first two words because for the first group they were unsolvable. However, all of you receive the same last word but half of you

did not try. This experience was designed by Nixon (2007) to help us understand the

phenomenon of Learned Helplessness.

Script: Learned Helplessness was a term first coined by Seligman, Maier, Geer, and

Hunt (1968). Dogs were harnessed in a shuttle box where they were shocked by an

electric current. After 64 shocks the dogs would no longer seek to escape and simply

laid down offering no resistance. Twenty-four hours later the same dogs were placed

in the same shuttle box without their harnesses alongside a new set of dogs. Once the

shock treatment began the new dogs jumped over the barrier to escape the shock.

Despite the success of the new dogs, the dogs who had endured the previous 64

shocks remained passive and simply laid on the ground.

Eventually human subjects would be used with sounds and anagrams to

demonstrate the same emotional and cognitive effects. This motivational deficit was

common for those who thought they had no control over their circumstances

(Abramson et al., 1978). Once a student suffers multiple academic failures, they tend

to manifest diminished persistence, lack of self-confidence, self-doubt and self-

criticism, which is common with those identified with learning disabilities (Hen &

Goroshit, 2014).
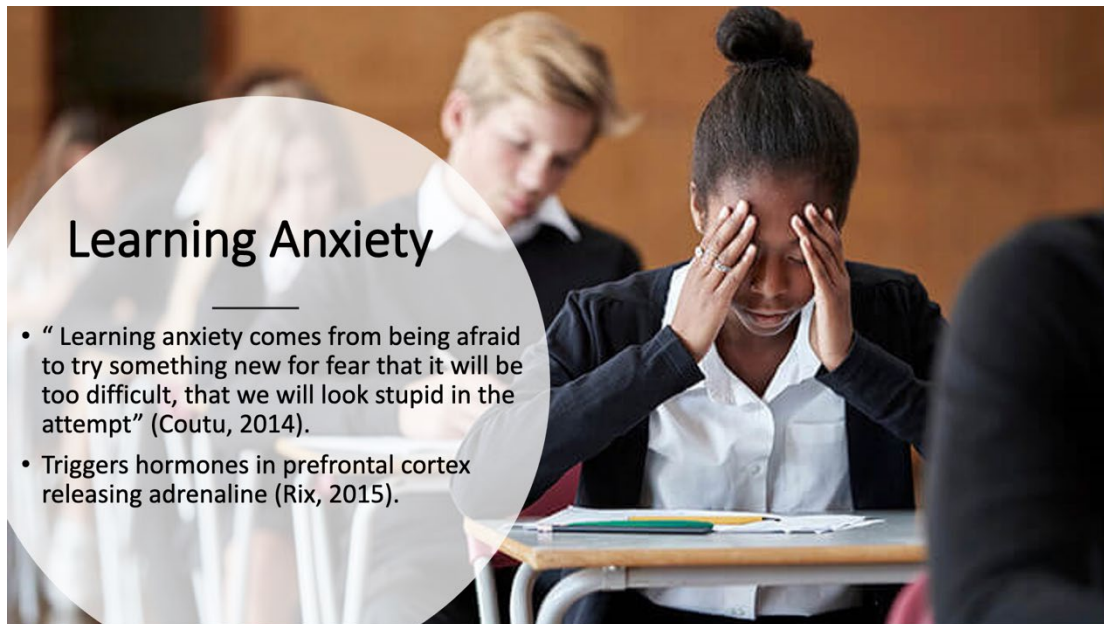
Script: Learning anxiety has been defined as being afraid to learn something new (Coutu, 2002). It is neurological response to learning a particular subject that involves an influx of adrenaline into the body which causes increased heart rate, breathing, high blood pressure and rising body temperature (Rix, 2015).

Fergeuson et al. (2015) found that this psychological reaction impairs spatial ability and is the cause of poor academic results. Students that manifest this type of anxiety are no longer able to focus and lose their working memory (Rubenstein et al., 2015). Just the mere appearance of a math problem may trigger an episode of this form of anxiety (Pizzie & Kraemer, 2017). Other research has equated this type of anxiety to that of a fear of spiders or snakes (Rubenstein et al., 2015). Recent research demonstrates that those with learning disabilities have anxiety levers that are nearly double of those of their non-disabled peers (Haft et al., 2019).
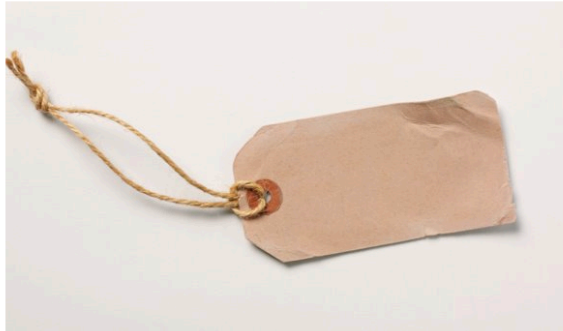
Script: A second consideration to the emotional and cognitive disengagement may be the discrepancy model of identification. Special education has long used a medical model to identify and classify students receiving services under IDEA. However, the underlining premise of such a model is that all learning problems are a byproduct of a disease or deficiency with the student (Massoumeh & Leila, 2012). The underlining message from this labeling system is that students are unable to learn because of factors beyond their control.

In this model students are given an IQ and achievement test. If the students IQ or ability is comparatively higher than achievement, then the student is considered as having a disability (Iris Center, 2021). Dweck (2016) challenges the very notion that an IQ test as an accurate measure of ability by citing the founder of the IQ test, Alfred Binet, who claims intelligence is not fixed.

GROWTH MINDSET FOR SECONDARY TEACHERS

In recent years, neurobiology has permitted the rise of a new approach to special education called neurodiversity. This is a strength-based approach that places all students on a continuum of personal assets (Armstrong, 2017; Lambert, 2018). The emphasis is placed on helping students recognize and utilize their strengths in the classroom and workplace rather than deficiencies or what they cannot do well.

Script: As classroom practitioners, teachers will be able to verify the research from their own personal experiences. According to Merrian (2001) discussion is one of the central pillars for adult learning theory as each participant becomes a join inquirer assisting in each other's learning by debate and concept formulation. The discussion may be best accomplished through a team discussion in the form of a Round Robin where participants take turns responding orally to the questions after groups have had time to discuss.

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Module 2

The Method When Adopting a Growth Mindset

According to the previous module, students with learning disabilities struggle with the effects of a discrepancy model of identification, Learned Helplessness, and learning anxiety. These effects are cognitive and emotional. Most interventions have targeted the academic deficiencies of students rather than working to reverse the years of negative stereotypes gained from special education services (Lata & Deepika, 2017). Although an increase in money may help obtain additional services and resources, the solution is not just more funding. The American Rescue Plan of 2021 had the distinction of being the first stimulus plan to include an allocation of 3 billion dollars towards the Individuals with Disabilities Act (Owens, 2012). Although this may seem like a vast amount of money, federal monies have only accounted for 9% of special education budgets with the bulk coming from local districts (46%) and state (45%) (McCann, 2014). Additional funds are welcomed but not the panacea necessary to change the inertia of academic achievement for students with learning disabilities.

The National Center for Learning Disability (2017) issued a report claiming 90% of students receiving special education services score below benchmark on the National Assessment for Educational Progress while spending 80% of their time in classrooms with general education teachers who do not know how to properly service them. As a classroom practitioner, I have found that most general education teachers at the secondary level are masters of their content but have little training or

experience in working with students who struggle. Research by Parchomiuk (2019) surveyed 280 general education teachers with an average 15.23 years of teaching. In that study she found that general education teachers tended to have negative attitudes toward those with disabilities because of the difficulties and limitations associated with these students' performance in the classroom. She suggested a lack of experience and training as the cause of limited perspective and understanding.

Students with learning disability need more than academic intervention, they need something that restores the motivation to learn. Growth Mindset theory highlights the positive potential and works to change deficit thinking, which is highly beneficial for students with learning disabilities (Garwood & Ampuja, 2019). This module is designed to help teachers see how Growth Mindset theory targets those deficits and addresses the affective domain that can be coupled with academic instruction to bring about significant change.

Module 2

Title: The Method: How do we support our students with learning disabilities?

Time: Approximately two hours in length

Terminal Learning Objective: The participant can justify the merits of a Growth Mindset for students with learning disabilities

Learning Objectives:

- Define a fixed and Growth Mindset

- Identify language that indicates a growth or fixed mindset

- Deconstruct arguments criticizing Growth Mindset

- Formulate underlining causes behind a fixed mindset

- Appreciate the struggle associated with Growth Mindset

Materials:

- Presentation software and television

- Whiteboard for outlining discussion points
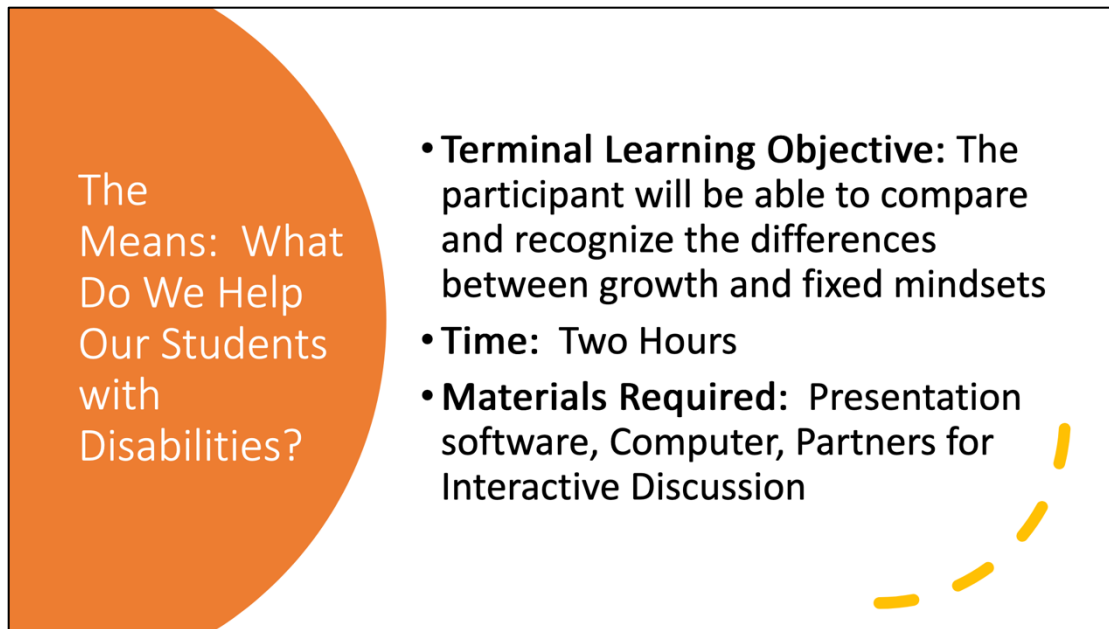
Activities:

- Small group and whole group discussions

- Interactive demonstration
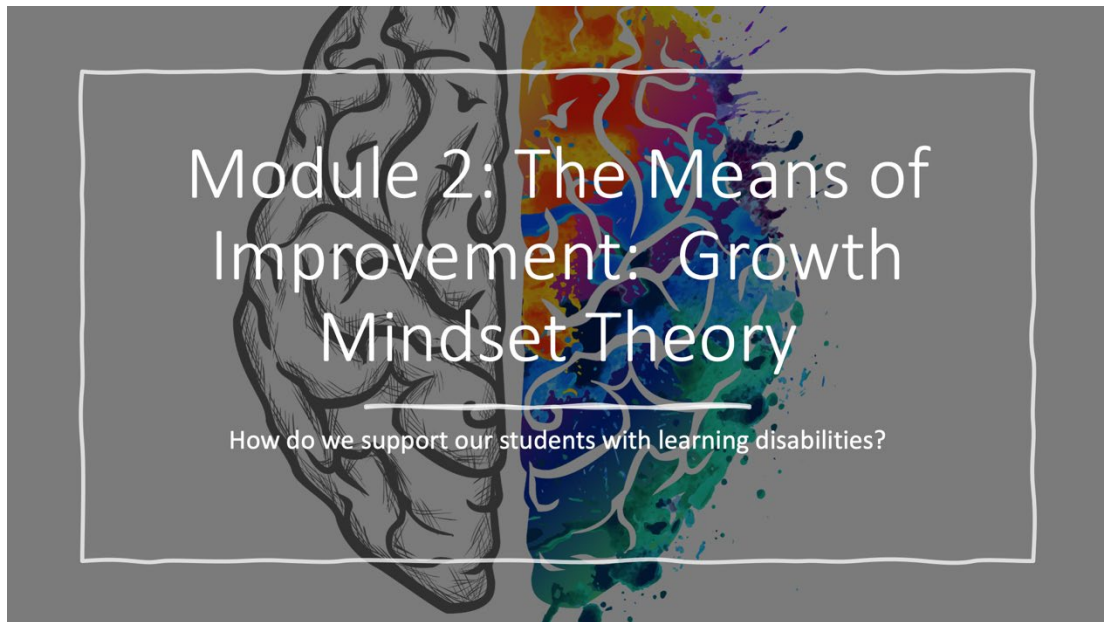
Script: Often well-meaning teachers are at a loss as to what to do for students who lack the inner strength and will to overcome the difficulties of their previous classroom experiences. To improve student achievement, teachers must target the motivation to learn. Motivation is foundational to achievement. In recent years there has been a decline in student desire to learn. Called the "school engagement cliff," one student poll found that while 74% of fifth graders felt like they were engaged only 32 percent of high school juniors felt the same (Matthewson, 2020, p.1).

To change this increasingly common narrative, Ortiz-Alvarado et al. (2019) suggests targeting student mindset and found that in a performance sample of 1,240 students, those who score high in Growth Mindset tend to have higher grade and better well being than those with a fixed mindset. This research suggests that mindset does matter.

The Means: What Do We Help Our Students with Disabilities?

- **Terminal Learning Objective:** The participant will be able to compare and recognize the differences between growth and fixed mindsets
- **Time:** Two Hours
- **Materials Required:** Presentation software, Computer, Partners for Interactive Discussion

Script: Growth Mindset is a popular theory that has great potential for addressing both the emotive and cognitive needs for students with learning disabilities. In this lesson, teachers will learn about the origins of Growth Mindset, how to distinguish between a Growth Mindset and a fixed mindset and understanding the potential students have to alter their own mindset. This lesson will allow attendees to discuss and share examples of both growth and a fixed mindset and to formulate their own explanation if a Growth Mindset is preserved or obtained during one's existence. Finally, the lesson will remove some of the myths regarding mindset by restoring the notion that Growth Mindset is a process that encourages struggle and mastery.
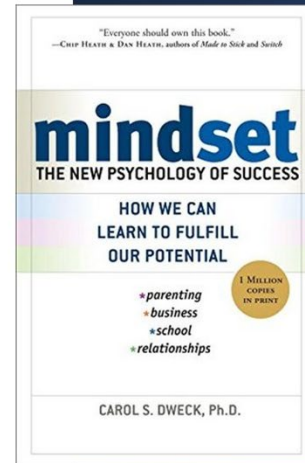
Script: Growth Mindset is a term that was coined by Carol Dweck in her popular book titled: *Mindset: The New Psychology of Success* in 2016. Dweck shares her struggle to understand how people without talent were successful while others with talent were unsuccessful in a variety of ventures (Dweck, 2016). She discovered the issue was not talent or innate ability but mindset (Ragan, 2017). She identified two attitudes or mindsets as two extremes of a broad continuum. One end of the continuum was Growth Mindset while the opposite she titled fixed. Individuals with fixed mindsets believed they had been born with inherent or born ability while those with a Growth Mindset believed they could build or develop ability. Later in an interview with Harvard Business Review in 2016, Dweck declared that Growth Mindset places emphasis on an internal process more than an outward product. This

progression of improvement involved "hard work, good strategies, and input from

others" (Dweck, 2016).

Script: David Shenk, in his book *The Genius in All of Us* (2010), corroborated

Dweck's Growth Mindset theory by asserting that genetic code is not a blueprint of a

person's destiny, but rather outcomes are based on a combination of factors. This

includes genes and environmental influences. Both his work and Dweck's intersect

in that they claim intelligence is a process of development rather than a onetime

genetic fix. To illustrate his point, he demythologizes the idea that Mozart was a

prodigy or as Mozart's father called him the "Miracle born in Salzburg" (Popova,

2015, p. 1).

Instead, Shenk (2010) shares the story that Mozart was the product of an

accomplished composer and published and experienced music educator father who

cultivated his son's interest in music. By the time his son was four, young Mozart

was playing the harpsichord. Shenk claims Mozart was an average musician but day

by day was required to play and copy music and Mozart's first compositions were mediocre at best (92Y Plus, 2014). However, by the time Mozart was 13 he had toured all the noble houses of Western Europe.

Shenk's claims were verified by Galdwell (2019) and Ericsson et al. (1993) research who both claim mastery requires 10,000 hours of practice or nearly the equivalent of 10 years if a person were to spend four hours a day practicing. What is perceived as talent by some is simply an accumulative advantage.

Students with Learning Disabilities Tend to Have a Fixed Mindset

• "In a fixed mindset, **people believe their basic qualities, like their intelligence or talent, are simply fixed traits.**" (Dweck, 2016)

• Indicators include limited autonomous functioning, frequent procrastination, and minimal academic achievement (Mouratidis et al., 2017).

Script: Dweck defined a fixed mindset as one that is static and does not change with time or circumstance. Fixed mindset individuals believe there is little they can do to change what they know. As teachers, we have heard students justify a poor performance with, "Well, I am not a math person" or "Reading just isn't my thing." According to Nicoll (2014) those students with a fixed mindset default to prior behaviors, methods, beliefs and techniques when seeking to achieve goals or solve problems" (Nicoll, 2014). This description of fixed mindset often mirrors those receiving special education services. Mouratidis et al. (2017) describes the effects of fixed mindset on students with learning disabilities as limited autonomous functioning, frequent procrastination, and minimal academic achievement. It may be supposed that the fixed mindset favors the nature or biologically determined model. It is the basis of the discrepancy model that drives special education (Nicoll, 2014).

Students with Disabilities Need to Develop a Growth Mindset

- "In a growth mindset, **people believe that their most basic abilities can be developed through dedication and hard work**—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment." (Dweck, 2016)
- High Risk Students after being exposed to growth theory were able to lessen anxiety and complete a class learning target (Schleider & Weisz, 2016).
- Improved self-concept, academic resilience, and positive attitude toward their disability (de Carvalho & Skipper, 2020).

Script: The converse of a fixed mindset is Growth Mindset. According to Dweck's definition, the combination of effort and curiosity increase the individual's capacity to grow and learn. Research by Polirstok (2017) found that cognitive and behavioral strategies based on Growth Mindset helped build persistence and grit for students who were at risk for failure at the secondary level. Schleider and Weisz (2016) merely introduced the concept of Growth Mindset to an intervention group through computer module training which helped to reduce anxiety about having to give a three-minute speech. In this study Growth Mindset simultaneously empowered students while relieving apprehension in the classroom. These two advantages were unseen in the control group.

Finally, De Carvalho and Skipper (2020) used Growth Mindset theory to challenge negative stereotypes in a 10-week program for students receiving special education services. In the short-term, students' attitudes improved but there was no

significant academic gain. It was postulated that long-term intervention could

produce significant change. Regardless, these studies demonstrated that Growth

Mindset intervention benefited those who already manifest issues with stress, anxiety,

and learning disabilities.

• Chart (Romero, 2015)

• Fixed vs. Growth

• Emotion and Cognition

• Belief and Behavior

• Growth Mindset Targets

Students' Loss of Control

	FIXED Mindset	GROWTH Mindset
Definition	Belief that ability is a **fixed** trait that cannot be changed	Belief that ability is **malleable** and can be developed
Interpretation of Effort	Effort is **bad**; if you're smart, you shouldn't have to work hard	Effort is **good**; its how you be better
Motivation in School	What matters is looking smart, so you can **prove** your ability	What matters is learning, so you can **improve** your ability
Behavioral Repone to Academic Setbacks	**Helplessness**; setback is a sign that you don't have what it takes	**Resilience**; setback is a sign that you need to work harder or try a new strategy
Meaning of Failure	Failure is the **end of the story**; time to give up	Failure is the **beginning of the story**; time to try again

Script: Romero (2015) contrasts and compares fixed and Growth Mindset. Although these represent two extremes, mindset theory is a continuum with multiple combinations. Growth Mindset theory targets both the affective and cognitive issues common to students who suffer from Learned Helplessness, learning anxiety, and labels from the learning discrepancy model of identification. Seitchik and Harkins (2015) suggest that students with learning disabilities who struggle with working memory and retention may overcome those task performance issues through the motivation and efforts fostered by Growth Mindset. Even Dweck (1975) in an early study seeking to reverse the negative trends of Learned Helplessness stated that "if a child believes failure to be the result of his lack of ability or the result of external factors beyond his control, he is unlikely to persist in his efforts" (p. 683). Growth Mindset restores this locus of control back to the students. According to Bandura's

(2001) social learning theory, the learner must believe his or her efforts will impact

outcome.

Script: The rise of neurological research has confirmed that the brain can grow and change. However, as educational practitioners the real question is how we can get our students to see that truth and begin the process of growing their brain. The Saying is Believing effect is about creating a persuasive message to another person to strengthen them for task completion (Yeager & Walton, 2011). If students do not believe their brain can grow, then they will adopt learning goals that only demonstrate their current capacity (Dweck, 2016). This form of stagnation is the essence of the fixed or entity theory (Costa & Faria, 2018).

Using brain scans, Ng (2018) found that there is parity between Growth Mindset and instructional motivation in the same regions of the brain. Those scans revealed increased activity and motivation in students. The implication by the researcher is that as students' motivation improved as they made sense of their mistakes and saw dopamine levels increase.

Mindset Matters Chart (McGuire, 2021).

Instead of...	Try Thinking...
I'm not good at this.	What am I missing?
I give up.	I'll use a different strategy.
It's just good enough.	Is this my best work?
This is too hard.	This may take some time.
Who am I to be smart, talented ... ?	Who am I not to be?
My plan failed. It's over.	There's always a Plan B.
Why can't I do it like [someone you admire]?	What do they know that I don't know? I will learn from them.

Script: The value of this chart prepared by McGuire (2021) is that it provides

statements or language which may be used to indicate a growth or fixed mindset.

Using this as a diagnostic tool we can determine the mindset of students with

disability. As a means of remediation, students should begin to change their language

to change their thinking. Bettinger et al. (2018) studied the effects of low belief on

students' perception of their own learning. When confronted with difficult curricular

demands, students with an initial fixed mindset demonstrated significant

improvement. This research illustrates the power of non-cognitive skills-such as

student belief and the impact they can have on perseverance and success in the

classroom. A similar, longitudinal study demonstrated that such interventions impact

those who possess an entity mindset before the intervention (Yeager et al., 2014).

Both studies help instructors see the interdependent play between academic and social

perceptions addressed by Growth Mindset theory.
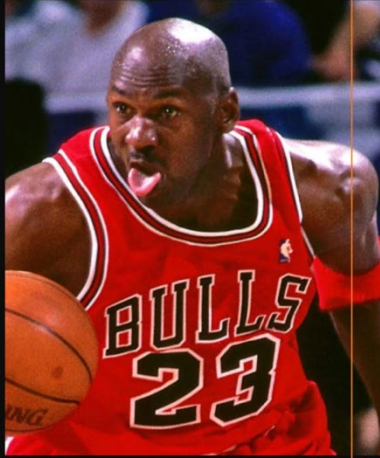
Script: In recent years, Growth Mindset theory has come under attack as an ineffective means to improve student performance. In 2018, Sisks et al. conducted a metanalysis of 129 studies in its first search and then 29 in its second. The researchers claimed that both analyses demonstrated weak effects, sizes and other factors may have been the cause for short term gains. However, Zeeb et al. (2019) suggests that most Growth Mindset interventions give direct instruction on neo-plasticity or brain growth. Further in these interventions students merely discuss examples of learning using Growth Mindset and then produce an article such as a letter to encourage a fixed mindset person to adopt a Growth Mindset. These interventions lack ongoing instruction and a pedagogy embedded with Growth Mindset. Rather they are snap shots that rarely have a lasting impact.

In 2020, Yeager and Dweck sought to counter this criticism by asking if effect sizes were meaningful enough to merit attention. They determined that large scale

studies by third parties such as governments were necessary to justify confidence in

the Growth Mindset research.

Script: Can you give a real-life example of Growth Mindset and its power to change the trajectory of a life? When you think of Michael Jordan what do you think of his career? Rashad suggests several very fixed characteristics, "speed, agility, power, raw talent." However, when Rashad interviewed Michael Jordan, it was surprising what was revealed.

Rashad asked, "Was fear of failure a motivator?"

Jordan answered, "I never feared about my skills, ya know, because I put in the work. Work ethic eliminates fear." Interview cited in Tervooren (2021).

Notice Jordan affirmed the power of effort rather than natural born talent as his key to success. Do you believe this would resonate with students?

Script: As we near the completion of the hour, I will ask you to consider if Growth

Mindset is something you are born with or develop. According to Tervooren (2021),

all people initially begin life with a Growth Mindset; but the learned experiences in

life detract from that natural form of optimism. Using the attached chart, he

demonstrates how a series of negative experiences systematically put people in a

fixed mindset. On the other end of the spectrum is Anderson (2019) who claims

individuals must catch a Growth Mindset. His lectures and book claim that Growth

Mindset is a journey not merely a declaration and that a person must intentionally

develop this mindset.

In the last few moments remaining, take a moment to discuss your own

thoughts. Is Growth Mindset something all humans are born with or is it something

that must be learned? What is common between your individual theories and what is

different? After six minutes of discussion, we will ask for a few comments.
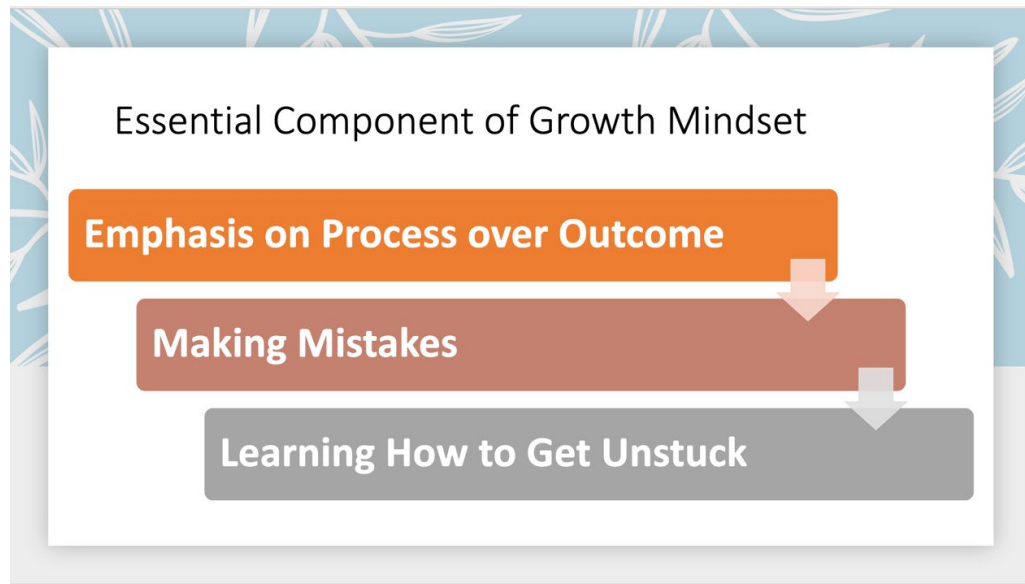
Script: In conclusion in the previous slide, we saw that regardless of how you believe a Growth Mindset is obtained, it must be cultivated if students are to catch it or retain it. Steurer (2018), who worked to remediate incoming freshmen for college math, found that Growth Mindset had three primary qualities that would turn passive students into active learners. These were 1) emphasis on process over outcome, 2) making mistakes, 3) learning how to get unstuck.

This might explain why Growth Mindset has come under attack in recent years. Praise and increased effort are insufficient to produce solid and lasting results. According to Davis (2019), the value of Growth Mindset is not what can students do, but how they develop or undergo a process which includes effort, challenge, mistakes and feedback. Rissanen et al. (2021) also found that the core principles of a Growth Mindset pedagogy are 1) support of individual learning processes, 2) promote mastery goals, 3) be persistent, 4) foster process orientation.

When working with students with learning disabilities, teachers must provide lessons that include these three primary elements to cultivate a Growth Mindset. Students should not place the emphasis on the right answers but the actual process of learning something new and extending the limits of their own knowledge. It necessitates making mistakes and then acquiring new strategies that get them "unstuck." Abernathy et al. (2021) agrees that Growth Mindset tends to make students more entrepreneurial and innovative.

For students with learning disabilities, this requires a teacher who can maintain a delicate balance by not offering too much support too soon (Brophy, 2018). Fading support and allowing students to bear the responsibility for their own learning is key to long term success. Sadly, this is not the norm. According to Butrymowicz and Maer (2020) in a survey including students from 34 states, low expectations regardless of ability level were common in schools in which those with learning disability attended.

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Module 3

The Members Who Help Students in Adopting Growth Mindset

Although students are the focus of education, teachers regulate the conditions that make learning possible. In a series designed to impact students with learning disabilities, there must be a segment designed to capacitate teachers. Educators must work to develop the Growth Mindset in students with disabilities who need to overcome the cumulative impact of Learned Helplessness, stereotypes from the discrepancy model of identification, and learning anxiety. A teacher's culture and prior experiences play a role in how and what they teach. These teacher beliefs or assumptions are complex and multifaceted and require a comparative review through self-awareness and self-reflection (Basckin et al., 2021). This requires a reflective approach which includes self-questioning to determine if teaching practices are merely an accumulation of "acculturated" bias or preference (Kauffman & Landrum, 2013, p. 7). What teachers expect of themselves and their students with learning disabilities remains one of the most critical factors in seeking student growth.

This module uses research to illustrate the importance of teacher beliefs and the impact those beliefs have on students' outcomes. Teachers do not instruct out of a vacuum, but radiate their mindsets through material selection, student placement, and teaching expectations. Only as teachers manifest a Growth Mindset will the entire classroom improve and students with disabilities begin to develop the persistence and confidence to risk successful outcomes.

Module 3

Title: Members: Who can help our students with learning disabilities develop a Growth Mindset?

Time: Approximately one hour and 30 minutes

Terminal Learning Objective: The participant can specify the power of teacher's collective efficacy in developing a Growth Mindset in students with learning disabilities

Learning Objectives:

- Outline teacher behaviors that facilitate Growth Mindset

- Generalize beliefs that promote growth or fixed mindset behaviors

- Relate how beliefs and behaviors impact Growth Mindset in students

- Distinguish between a compliance or commitment mindset

- Evaluate the value of struggle necessary for Growth Mindset

Materials:

- Presentation software and television

- Whiteboard for outlining discussion points

- Post-It Notes for Discussion

Activities:

- Small group and whole group discussions

- Post Its, marker, white board, or large poster board for categories

Script: Although schools exist to prepare students to embrace their futures, the most important factor of a school building remain the teachers who occupy each classroom. Teachers rather than students guide topic, tempo, and tone of each class period. No matter the teacher's proclivity towards a constructivist or objectivistic philosophy, teachers build and maintain a host of environmental factors that will either be conducive or detrimental to student learning. Opper (2019) found that teachers and their management of non-academic factors are the most consequential contributors to students' performance. Burroughs et al. (2020) attempted to identify and prioritize the most important characteristic of an effective teacher such as experience, professional knowledge, or additional opportunities to learn which are qualities independent of mere content delivery. Both studies affirm teachers remain the primary catalysts for student learning. The implication for our present study is

clear. If students with learning disability are to develop a Growth Mindset, the

teacher component must play a prominent role.

Script: Students with learning disabilities need teachers who will help develop the student's self-efficacy. Based on Bandura's social cognitive theory, students must see beliefs and behaviors modeled if they are to first internalize and then replicate those behaviors (Bandura, 2001). In this lesson, we will review research that asserts this truth. The most important factor to reversing the years of Learned Helplessness, learning anxiety, and the negative effects of stereotyping from special education labels, is for the teachers to collectively model and personify the tenets of Growth Mindset (Bostwick et al., 2020).
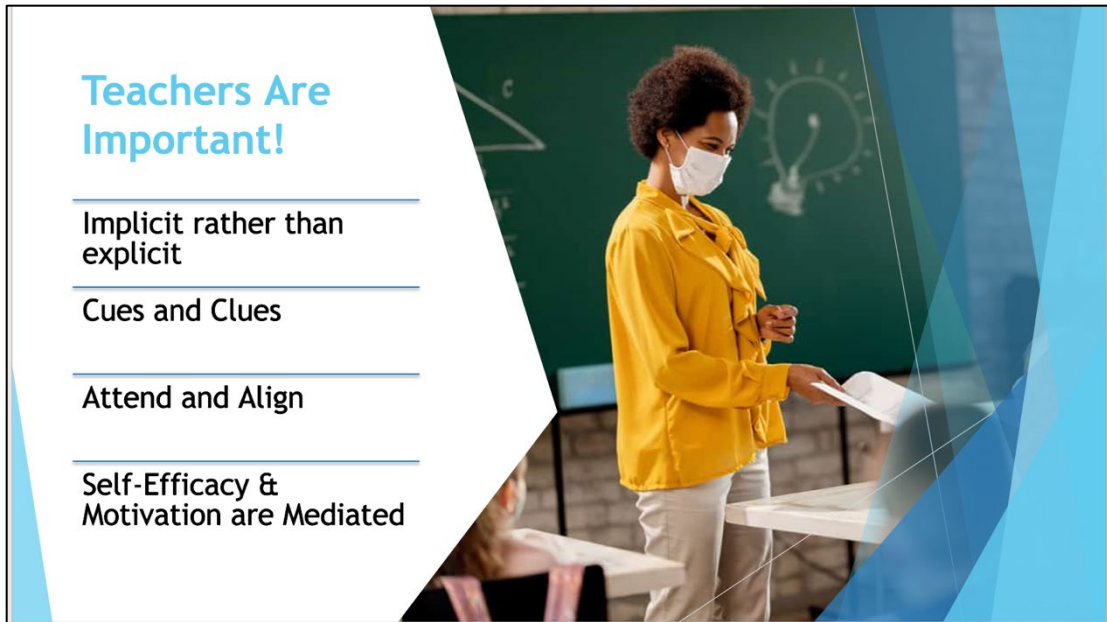
Script: Although there might be broad consensus that teachers are indeed important in helping students embrace a Growth Mindset, as teachers we might be compelled to believe it is the product of explicit instruction rather than more implicit through our own actions and beliefs. Students are very adept at discerning teacher cues and clues. Often these are non-verbal such as eye contact or a gesture of approval. At times it may be something as simple as just allowing a student with a learning disability to participate in a group discussion or answer a question. This inclusion implies a belief in the student's capabilities. According to Zeeb et al. (2020), instruction by teachers is what shapes student's beliefs and performance. In this study, Growth Mindset was not taught explicitly but integrated within classroom lessons by teachers who wanted students to develop a Growth Mindset. This research demonstrates when teachers align their techniques and personify Growth Mindset to students, it tends to promote a student's sense of agency.

Ke Kraker-Pauw's et al. (2017) qualitative research demonstrated when teachers' praise process rather than correct answers and provide sufficient time for students to answer, struggling students were more likely to attempt a new skill. When teachers gave specific, timely praise, it encouraged and capacitated students. Deci and Ryan (2012) claim students value their teacher's input and teachers have an opportunity to use this natural rapport to lead struggling students to successful academic outcomes. You et al. (2016) found that student self-efficacy and intrinsic motivation are mediated by students' perception of their teachers' beliefs and behaviors in the classroom. When teachers remain enthusiastic and confident in students, it produces confidence in the students and produces better outcomes. Once again research demonstrates that when teachers maintain a Growth Mindset, it is transferred to students who have traditionally struggled.
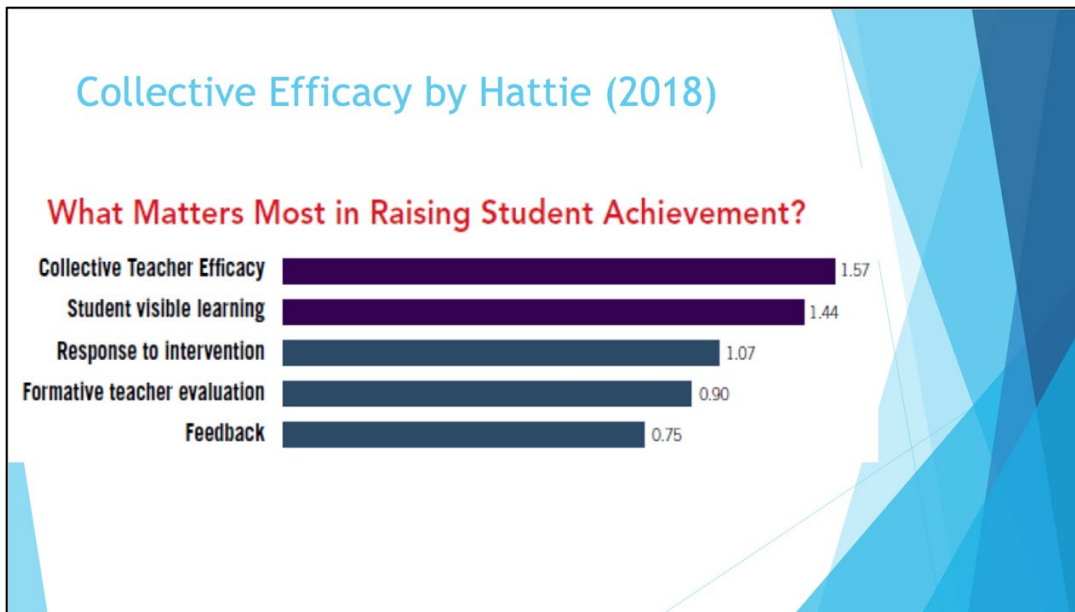
Script: In 2018, Hattie attempted to quantify student achievement and found the

greatest mean effect size for student outcomes was collective teacher efficacy.

Donohoo and Katz (2017) defined this as a "shared perception of educators that they

can organize and execute the course of action required to have a positive effect on

students" (p. 21). This combined research signals the importance of teacher

leadership and interaction with students to make promising techniques succeed.

Siegenthaler's (2018) chart illustrating Hattie's research itemizes the top five

strategies by mean effect sizes. It is interesting to note that the successive strategies

all relate to metacognition and Growth Mindset strategy. Donohoo and Katz (2017)

claim that efficacy beliefs in students can only change when teachers create a series

of mastery learning, vicarious experiences, social persuasion, and affective states

such as excitement and even anxiety. The second greatest mean effect size is titled

Student Visible Learning which is about teachers assigning task, process, and

reflection to move students into metacognitive learning. Peak (2015) contends that

metacognition and Growth Mindset are interrelated and for students to discover their

own Growth Mindset teachers must use metacognitive strategies.

Script: Teachers unwittingly teach behaviors. Rather than taking time to give explicit instruction on what a teacher may expect, students tend to mimic or simulate what they see teachers do. This is often called student agency and learned by observation and imitation (Stefanidis et al., 2019) which tends to "foster teacher dependency" (Mazenod et al., 2018, p. 1) on the part of students.

Bandura's (2001) famous experiment with the Bobo Doll illustrates the tendency students have to inculcate teacher behaviors and values. Children in a control group did not naturally show aggression or hit a Bobo Doll; however, when those in the experimental group saw an adult demonstrate aggression against a Bobo Doll nearly every child did the same. Bandura (2001) concluded that collective agency creates behavioral outcomes based on social cues. For teachers this is the basis of the transfer of belief and behaviors to our students.

Positively, this may help students embrace challenges and assume tasks that were once considered onus and beyond capacity. Conversely, this premise serves as a caution to teachers who may embrace a fixed mindset. Ramirez et al. (2018) found that higher teacher anxiety was associated with students who had a lower GPA. This reinforces the notion that process-oriented teachers motivated by Growth Mindset will naturally affirm students who struggle. Once again it is not so much what teachers teach but how they teach students at the secondary level. Wright (2016) illustrates this principle when he suggests that teachers who quickly intervene to help a struggling student answer a question, the student perceives this as a low estimation of his or her ability. This creates discrepancy between a teacher's profession and action and may breed discontent among students who struggle in the classroom.

Script: Already we have seen how teacher behavior is consequential to student outcome; however, there is research that also demonstrates the impact of teacher beliefs as well. Beliefs may be more subjective and subtle. In recent years Dweck in an interview with the *Atlantic* (quoted in Gross-Loh, 2016) has warned of a pseudo-Growth Mindset, which now dominates the educational setting. In this interview she articulated how most teachers mistakenly characterize Growth Mindset as telling students they can do anything or having students itemize what they like about themselves. She cautions against teacher praise when it is given independent of process and targeted behaviors. Dweck's concern reveals the importance of teachers need to uncover and encounter potential bias towards a fixed mindset.

Another teacher belief of concern is deficit thinking. Often deficit thinking functions as a foundation to a fixed mindset. Bertrand and Marsh (2021) found that

conversations with teachers revealed patterns of thought or bias toward students with learning disabilities. These researchers determined that low test scores often led teachers to default to student labels, services, or designations as a rationale for why scores were so low. Deficit thinking has been defined as linking students' academic outcomes to cultural background or upbringing and tends to be very common among teachers in the United States (Patrick & Joshi, 2019).

Anderson et al. (2018) likewise found that low achievement test scores contribute to teachers' negative perception and practice towards students, which indicates a fixed mindset. This thinking fails to respect the potential of students as individuals by reducing them to a score, and limits students' achievement to a stereotype. This often leads to tracking or ability grouping which only lowers expectations and reaffirms students' low perception of their own abilities. Instead, educators need to look at testing data for opportunities to reflect and adapt instructional techniques and optimize learning for students (Bertrand & Marsh, 2021).

One of the most promising practices to emerge, which can reconstruct teacher belief, is internal dialogue. Since teacher motivation and self-efficacy is a key determinate to student performance (Mahler et al., 2018), teachers need to restore their own locus of control by countering their own cognitive distortions or even sweeping negative thoughts such as catastrophizing (Weber, 2017). Seaton's (2018) qualitative study found inclusive teachers often struggle with accommodating students with learning disability. Brownlee et al. (2017) suggest the use of autoethnography techniques to help analyze personal experience. These simple

written narrative vignettes help teachers process their own emotion and bias as they have an internal dialogue concerning justice and disability which often leads to a change of belief and practice. Dev and Hayes's (2015) research confirms that only by action-oriented processes such as journaling and reflecting which target teacher's epistemic beliefs, will teachers' belief and practice change in working with students with disabilities. Educational leadership should consider structuring a time allowing teachers to recognize through internal dialogue their knowledge, understanding and explanations for students with learning disabilities (Dev & Hayes, 2015).

Script: In this activity attendees are given three Post-It notes, where they place one thought regarding data, deficit thinking, and dialogue under those designated columns. Teachers are free to place observations or questions without placing their names. The presenter will take time to review and share common themes for discussion under those columns. The rationale for this activity is to build social capital and transfer learning from fellow practitioners as attendees share deep personal beliefs without the fear of performance anxiety (Tong et al., 2017). Discussions by the shared beliefs will not only provide relevant feedback but give opportunity to appreciate the perspectives of peers while promoting improvement and lifelong learning.

Script: This chart illustrates how teacher beliefs shape teacher expectations and actions, which ultimately affect student performance. According to Dev and Hayes (2015), when teachers have low self-efficacy, students at the secondary level begin to manifest the same low beliefs in the content which is taught. Patrick and Joshi (2019) studied multiple teachers by observing classroom language and techniques and found that although their self-reported surveys showed they held a Growth Mindset, most teachers defaulted to fixed mindset language and techniques. A post-questionnaire revealed teachers' astonishment and desire to make sense of this phenomena.

Finally, Gupta and Sampat (2021) did a comprehensive survey of 16,000 teachers and discovered that when teachers were required to work with students who were below grade level or from troubled homes, these teachers were more likely to believe they would be unable to help these students. Teacher belief has the power to

either lower or raise classroom expectations which affect student belief and behavior.
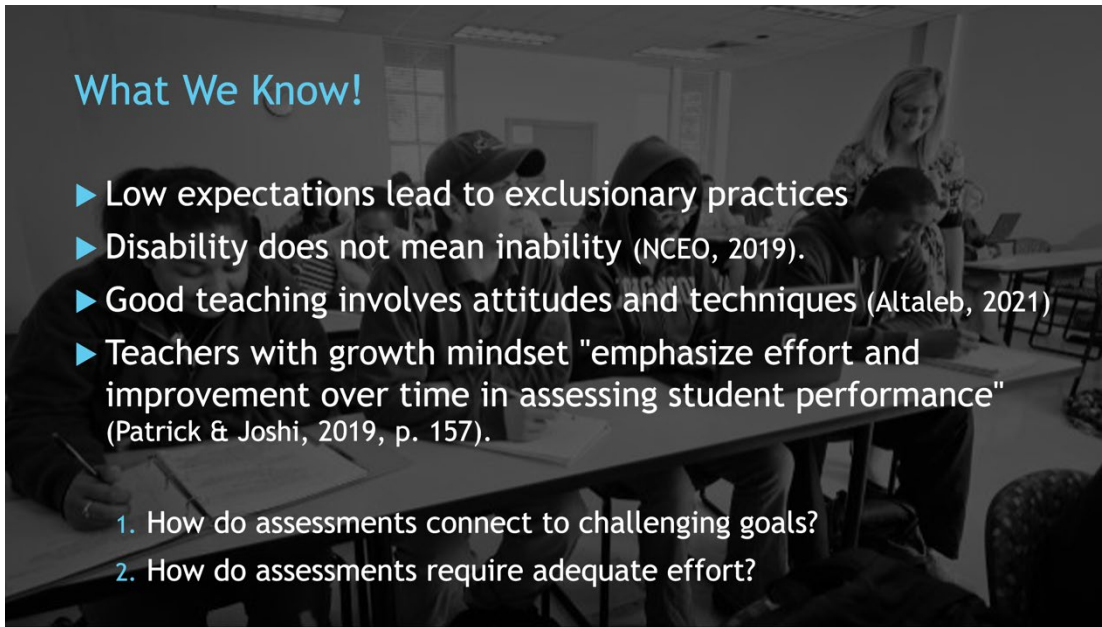
Teachers who do not possess a Growth Mindset are unlikely to inspire students to

have a Growth Mindset. Martin's (2017) chart on the left illustrates, how a teacher's

beliefs and actions towards students, impact mindset, actions, and ultimate outcome.
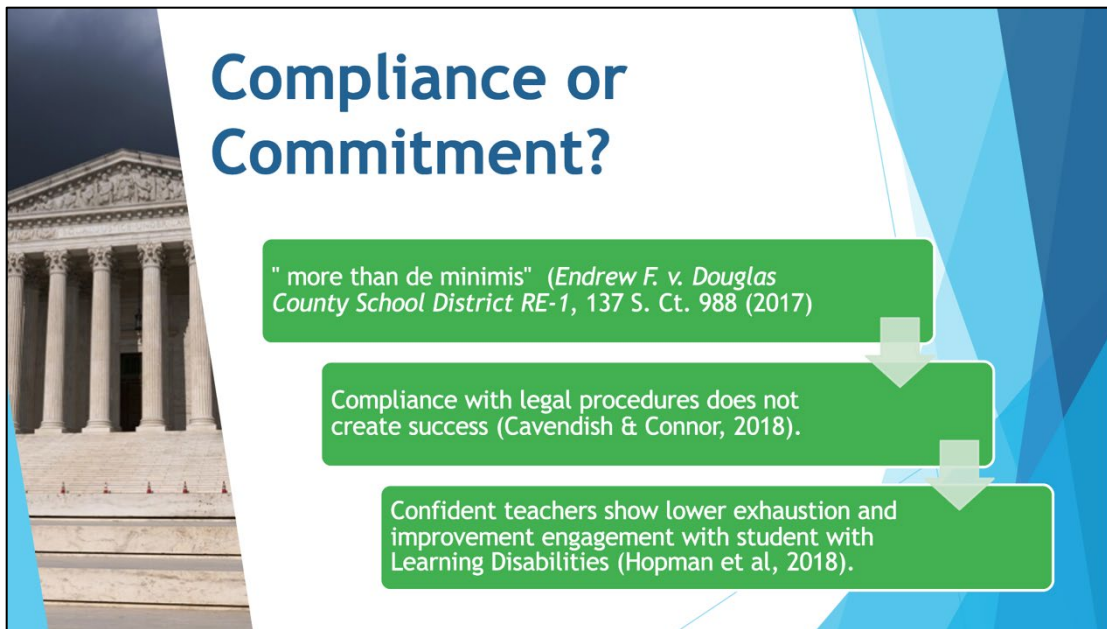
Script: Lower expectations for students with learning disabilities has become such an issue that it was addressed by the Supreme Court. In a decision titled, *Endrew F. v. Douglas County School District* (Yarnell & Wasser, 2017), the Supreme Court found the school district did technically provide services as required by IDEA. However, the service was considered "de minimis" or the minimum. In this decision, the district had violated the intent of the law that those with learning disabilities would receive "meaningful educational benefit." This case discouraged a compliance mentality for those who taught students who received special education service. Instead, educators should be committed to giving a quality education to this classification of students allowing them to manifest forward progression and achievement.

Recent research confirms what the courts have sought to correct. Cavendish and Connor (2018) in their mixed methods study found there was a lack of meaningful involvement of teachers and students with learning disabilities. Instead, a

compliance with a variety of legal procedures only alienated parents and failed to

benefit students. Hopman et al. (2018) surveyed 98 teachers in 14 different schools

and found that teachers in inclusive settings, who lacked self-efficacy and merely

complied with mandates, were exhausted, and saw increased student disruption.

Teacher mindset impacts the quality of teaching and student behavior.

Script: In review, we see that teachers remain vital in assisting students with a learning ability to develop a Growth Mindset. When teachers have low self-efficacy, it leads to lower expectations and exclusionary practices. Altaleb (2020) said it succinctly, "Students cannot learn effectively from teachers with a fixed mindset because those teachers lack flexibility to work with various learning abilities and capabilities of students" (p. 221). Only a teacher with a Growth Mindset mentality will begin to assume the challenge of working with students who may lack the metacognitive skills necessary to assume challenges and exert effort necessary for mastery as outlined in Growth Mindset theory. Teachers must realize they not only teach content, but attitude and that attitude is transferable to students. This synchronizes with Bandura's social cognitive theory that students learn in a community and must see behavior and beliefs in action before they begin to internalize them. Lin and Reigeluth (2019) encouraged teachers to scaffold or

segment instruction in the context of community to build a corporate knowledge if

students with learning disability are going to change their own mindset. The

Disabilities Natural Center for Educational Outcomes (2019) warns that often

exclusionary practices are a result of low expectations from teachers. As educators we

must constantly guard against the notion a student with a disability has no ability.

This usually manifest itself in two extremes. In the first scenario we offer so much

help that students have no opportunity to struggle with the material giving them a

chance to master the subject matter on their own. Or we avoid assigning difficult

material, giving these students what is far below their zone of proximal development

and is far below the standard of their non-disabled peers. Regardless both extremes

illustrate the point—low expectations—regardless of the motive--prohibit those with

learning disabilities from developing a Growth Mindset and achieving.

Script: Teachers tend to use the same techniques with all students, although students who underachieve would benefit from specific feedback, increased agency and techniques that cultivate a Growth Mindset (Pitt et al., 2020). Another researcher has found that teachers sympathy levels were higher for students with learning disabilities (Woodstock & Hitches, 2017). Teachers must be aware that special education services do not mean providing such extensive help, that teachers do all the work for the student. This has the opposite of the intendent effect. Rather than motivating, it demotivates students in the participation of their own education. Growth Mindset and learning disabilities do not mean a lack of rigor or hearty expectations.

Elmore (2021) illustrated this warning with an historical anecdote. In 1947, General Mills introduced a cake mix that only required the addition of water. The company was confident this would be a game changer and worked hard to market this new product. Instead, they found sales plummeted. To account for this frustration

result, General Mills hired Ernest Dechter to conduct research through focus groups to ascertain why people were not buying this new instant cake mix. He found that the lack of effort made people feel like they were not cooking. He recommended General Mills add an additional step which they eventually did—adding an egg to the cake mix. In his report, he tersely stated Betty Crocker's error, "you have removed the customer from the process" (quoted in Elmore, 2021, p. 1). Just like people who make cakes want to be a part of the process, teachers operating with a Growth Mindset will need to include their students regardless of disability status.

Martucci and Bloomberg (2020) recommended a threefold approach to improve student learning which included evidence, analysis, and action. Assignments without these three qualities robs students of the experience necessary for learning. Knight and Cooper's (2019) research confirms the power of mastery learning despite an initial implementation dip, when coupled with peer review and teacher feedback. In their study, efforts improved and students grew academically and emotionally. Growth Mindset teaching permits students to struggle with material that is just beyond their comfort zone.

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Module 4

The Means of Adopting Growth Mindset

This series has addressed/sought to answer the questions of why, who, and how to improve the academic experience of students with learning disabilities at the secondary level. The final concern is what tools do educators use to develop a Growth Mindset in students with learning disabilities. This module seeks to capacitate teachers at the secondary level with promising classroom strategies and techniques, which have the potential to close the achievement gap. However, it must be noted these techniques have been included as the final part of this program because the emphasis in change is on the people not the program (Fullan, 2016).

Research by Payne (2015) suggests that students who fail to achieve do so because of poverty or a lack of assets. Payne (2015) defines poverty as "the extent to which an individual does without resources" (p. 7) which include "financial, emotional, mental/cognitive, spiritual, physical, support systems, relationships/role models, knowledge of hidden rules at school and work, and language/formal register" (p. 25). The four means outlined in this module seek to offset this poverty or lack of resources. Once again, programing is no substitute for people, who empower students with learning disabilities, to assume their role in learning despite years of negative reinforcement from the discrepancy model of identification, learned helpless and learning anxiety. Harvey (2013) calls for an asset-based approach and claims it takes a minimum of 30 assets or supporters for students to obtain common goals at the secondary level.

Module 4

Title: The Means: What should we do to empower students with learning disabilities to develop a Growth Mindset?

Time: Approximately two hours

Terminal Learning Objective: The participant can assess and apply four means of instruction to empower students with learning disabilities to achieve at the secondary level.

Learning Objectives:

- Identify five neurotransmitters and how to apply them to positive learning outcomes

- Outline how teacher relationships enable students to succeed in the classroom

- Consider mastery grading to increase students' motivation and participation

- Compose Growth Mindset feedback messages

- Support the value of a heterogeneous community

Materials:

- Presentation software and television

- Timer for activities

- Whiteboard for outlining discussion points

Activities:
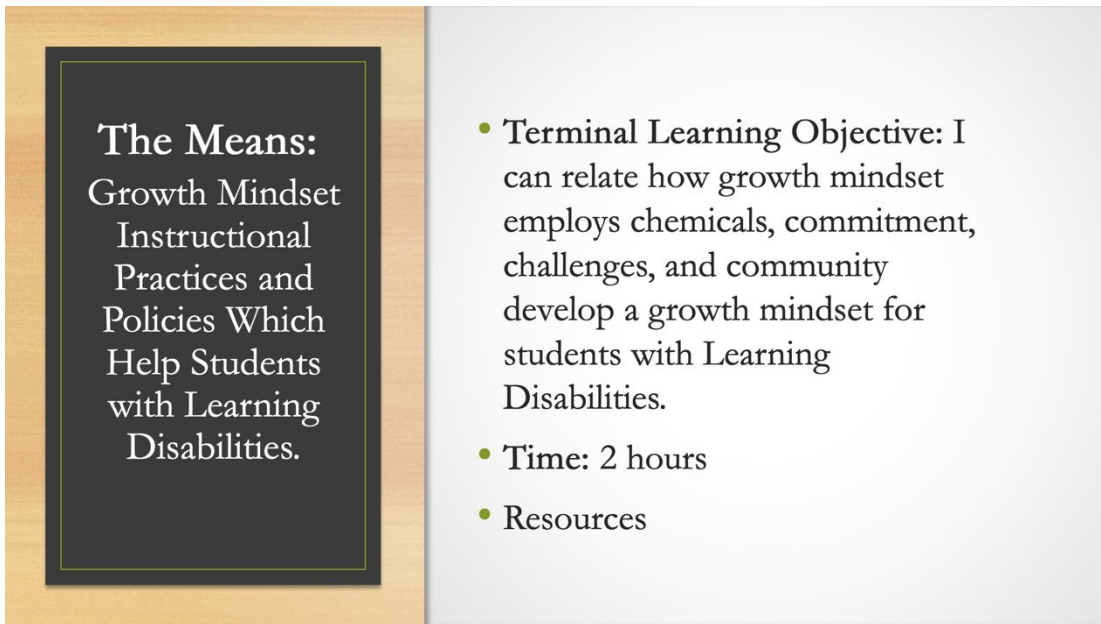
- Small group and whole group discussions

- Interactive demonstration
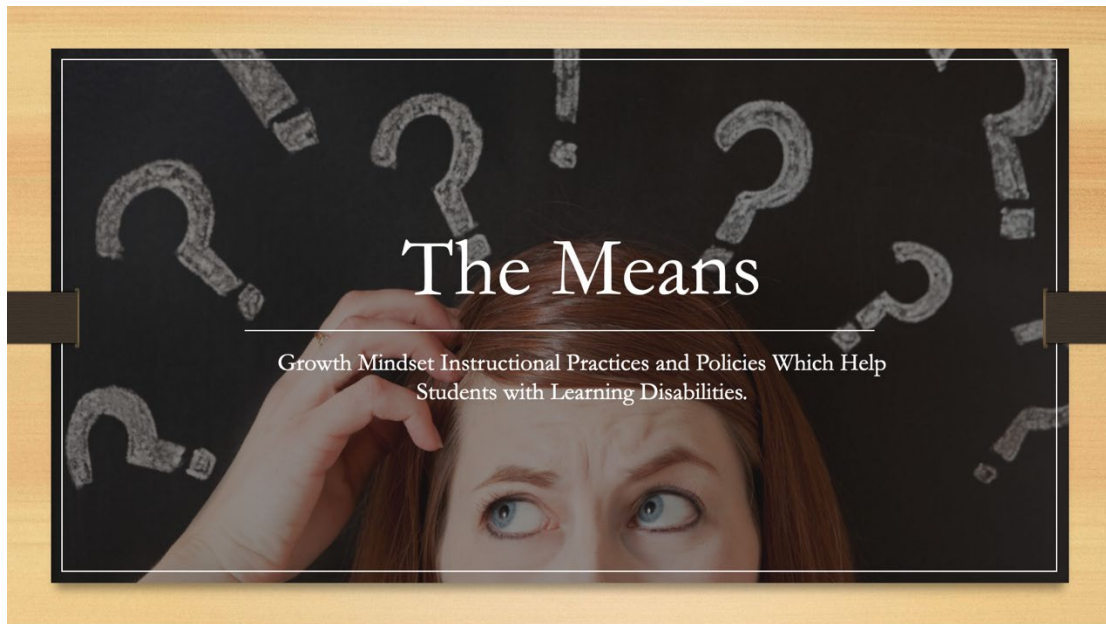
Script: Most, if not all teachers, have now found themselves in a position where they will have to teach students with learning disabilities. According to Chao et al. (2017) many teachers feel unprepared and lose a sense of their self-efficacy when confronted with this reality. Logical questions follow—"How do I help this special class of students?"; "What strategies can I employ to help these students learning alongside their non-disabled peers?"; or "Can I really make a difference since this is a long-standing problem that occurred way before my time?".

Teaching is a complex social interaction between teacher and student (Bandura, 2001). Lambert's (2018) ethnography builds on the premise that teacher training is an essential component in improving instruction to special education students. An analysis of her coding demonstrates the power of specialized professional development training as teachers' self-efficacy was strengthened, and the use of targeted learning strategies improved teacher perception and student

achievement. Teachers in this study found that using the student's preferred pedagogy saw student perseverance, grades, and social status improve. Although the author suggested that stigmatization of special education was caused by an outmoded system of identification, her analysis suggested student perseverance may be enhanced when aligned to appropriate instructional methods and the elimination of labels for students with disabilities.

The purpose of Module Four is to discover four means of instruction that tend to empower students with learning disabilities to achieve at the secondary level. Based on neurobiological findings we will discover the five neurotransmissions and chemicals which may be aligned with instructional techniques to receive the best learning response from students. Additionally, we will review research that demonstrates how teacher commitment is one of the most powerful predictors of student achievement and buy-in. A third consideration relates to the challenge or level of expectations necessary to reverse the trends of Learned Helplessness communicated through mastery-based grading. Finally, you will be exposed to the necessity of a diverse learning community that promotes positive learning experiences necessary for students with learning disabilities' ability to thrive.

This module will allow you, as educational practitioners, to discuss and evaluate these techniques. Participants will explore the possibilities and challenges in trying to implement these researched-based systems to close the achievement gap. Rather than seeing students with learning disability as an impediment to progress, you can now appreciate the power of relationships and provide the resources necessary for students to engage at deeper levels of learning.
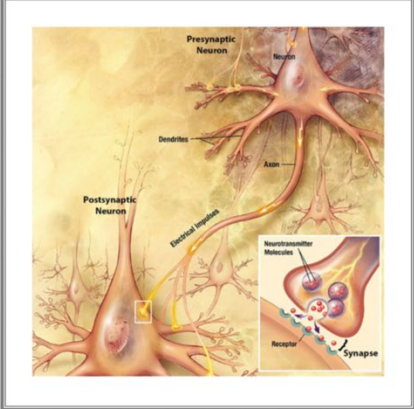
Transformative Change

- What can teachers do to reorient students toward progress, nurture their beliefs about effort, and teach them learning strategies upon facing setbacks? (Nguyen, 2020)
- Celebrate Progress & Non-Judgmental Atmosphere
- Summarized into Four C's for LD—Chemicals, Comments, Challenge, Community

Script: Nilholm (2020) laments the lack of progress in special education services since the Salamanca Statement by UNESCO in 1994 which argued for inclusive services. Researchers reaffirmed that inclusion is complex, but that school systems, schools, and classrooms must challenge longstanding restrictive practices and create true change. This type of change has been called transformative change and has been defined as breaking up the status quo or disruption of hemostasis (Nicoll, 2014). To illustrate the need for change, Nicoll (2014) quotes Albert Einstein who said, "We can't solve problems by using the same kind of thinking we used to create them" (p. 49).

As educational leaders and classroom practitioners, we are encouraged to follow the counsel of Ngyuyen (2020) who envisions transformative change beginning in the classroom with individualized interactions assisting students with learning disabilities to embrace a Growth Mindset. By systematically identifying and

celebrating progress in a safe and non-judgmental classroom, students can begin to counter internal narratives that have limited their own metacognition. This module outlines four "C's" that may be useful in helping students at the secondary level develop a Growth Mindset.

Script: The first "C" to consider is **chemicals**. According to Steka (2018) these are the signaling molecules which are responsible for the brain function. These neurotransmitters regulate a student's cognition, emotion, and behavior. Teachers who understand this function will be able to effectively align instructional strategies to elicit optimal student performance. When these facts are neglected, instruction may work against these natural functions and only reinforce a student with learning disabilities negative perspective, thereby promoting a confirmational bias in students. Ng (2018) believes that learning is primarily a neural process and should target synaptic functioning, which involves five neurotransmitters or hormones.

Cortisol is an example of a negative hormone which is produced in the adrenal cortex. Dimolareva et al. (2018) found that for students receiving special education services, this powerful hormone is secreted in stressful circumstances and is the cause of cognitive shutdown or negative behaviors. Lee's et al. (2019) research suggests

students with a fixed mindset frequently registered higher amounts of cortisol levels when frustrated and often see grades decline. Additionally, Anderson's (2013) research demonstrated that dysregulation with dopamine is common for those with Parkinson's disease and attention deficit hyperactivity disorder. His experiments with fruit flies demonstrate that increased levels of dopamine may be the cause of learning disability.

The research regarding dopamine and cortisol both demonstrate that the influx of these chemicals impact brain function and learning. Teacher understanding of these chemicals permits proper environmental control that would assist student learning. Student engagement hinges on brain activity.
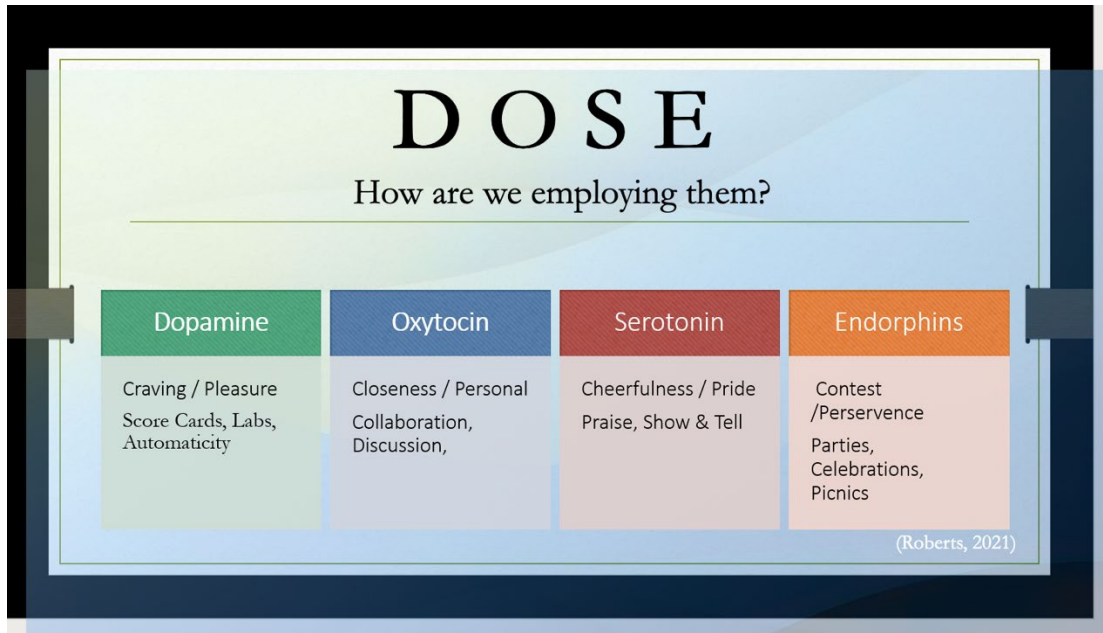
Script: Based on Roberts's (2021) chart, instructors can see four primary positive

chemicals that have a definite impact on a student's brain function in class using the

acronym DOSE.

The first, dopamine, deals with a person's craving. This contributes to the

feeling of accomplishment. When a student accomplishes a task, dopamine is

released producing a positive sensation or pleasure. Often this chemical is associated

with addictions, however, when used judiciously it allows a student to remain focused

for long periods of time and increase working memory and retention (Westbook &

Braver, 2016). In excess, it is the root cause for gambling and video gaming (Roberts,

2021); however, giving out clear goals and using checklist or score cards, students

benefit from this sense of accomplishment or a goal completed.

The second is oxytocin which is driven by trust and loyalty (Roberts, 2021) or is summarized in the chart as closeness. Tanaka et al. (2020) found that students with disabilities achieved greater results working in collaboration with other students. In this research, elevated levels of oxytocin were present. Feelings of love and loyalty suggest the need for increased levels of human interaction to illicit the best efforts from students with learning disabilities.

The third is serotonin which creates a sense of pride or gratitude and has been summarized by the word cheerfulness. Researchers Mantri and Nagar (2021) found that when students were able to participate and manifest learning through experimentation, demonstration, posing questions or group discussions; they had strong positive feelings from the effects of increased serotonin. When students can feature their learning, this produces a learning high which may maximize engagement.

Finally, the endorphins promote happiness and usually mask physical pain from physical exercise (Roberts, 2021). The summary word in the chart is contest. Doherty and Miravalles (2019) claim that physical activity triggers the release of neurochemicals such as endorphins which help with learning and memory. Contests and struggles that culminate with parties or celebrations have the potential to raise morale and release these positive sensations that may create positive interludes promoting student buy-in.

Teachers must work to cultivate positive reactions to learning experiences. Students with learning disabilities often come to class predisposed to negative

learning experiences. A knowledgeable teacher may begin incorporating these recent discoveries from neurobiology to help maintain an environment that is conducive to student learning.

YOUR TURN--Scenario

- You notice one of your students is sleepy and irritated. You know that student will need to listen to a mini-lesson to be able complete a long-term assignment. What chemical would this student need, and how would you activate it?

- Instead of handing out graded assignments for students to keep, you want to have your students feature their work in a way that will invest in the class. What chemical would help you achieve this purpose and what strategies would you use?

Script: Break up into groups of four and review these two scenarios. Take time to identify the underlining issue, what brain chemical could be used and possible assignments that could facilitate the appropriate chemical release.

The first scenario could be endorphin and a simple game of competition such as Kagan's four corners strategy could benefit this student. The second could be serotonin and a teacher could utilize this chemical by allowing students to create a model, poster, or info graphic to demonstrate their knowledge. The purpose of this assignment is for attendees to review, discuss, and formulate the information into usable paradigms for future instruction.
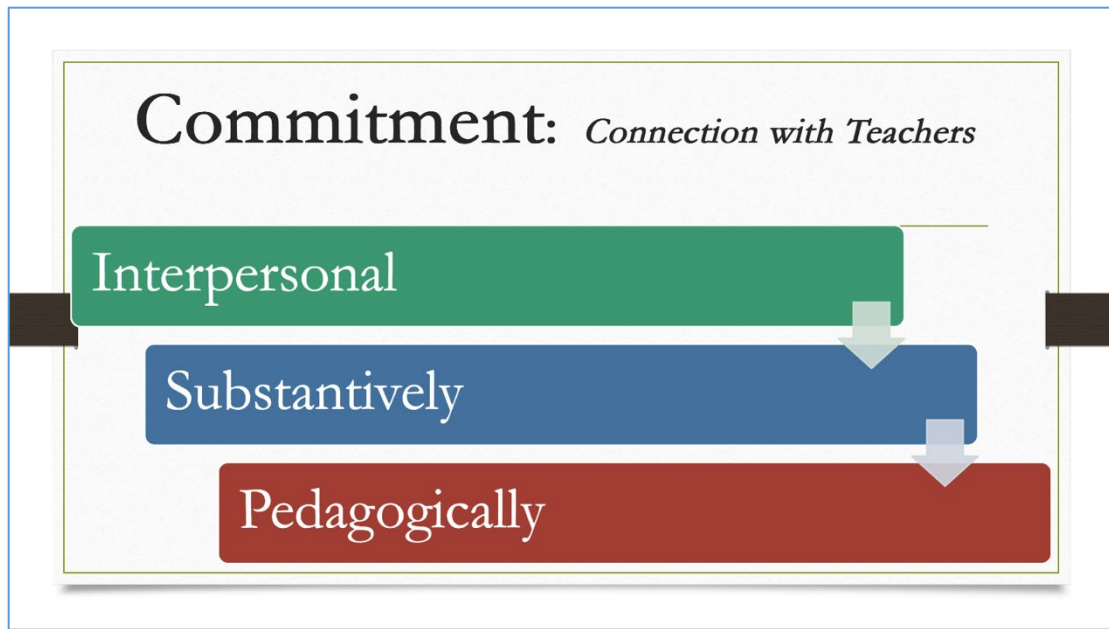
Script: The second "C" to consider is **commitment** or the teacher's commitment to

the student. Teachers must work to build trust with all students but especially with

those who have learning disabilities. Cavanagh et al. (2018) found that when students

with learning disabilities trusted their teachers, those students were more engaged in

learning and manifested Growth Mindset tendencies. They also found teachers whose

students did not have a great degree of trust tended to embrace a more incremental

mindset and lacked commitment to the teacher's learning objectives.

Teachers must build trust on several different levels such as the interpersonal,

substantial, and pedagogical (Martin & Collie, 2019). Interpersonal involves teacher

warmth or genuine concern for students, while the substantive deals with simple tasks

or instructions given by the teacher. The ultimate is the pedagogical, which involves

the teacher as the subject matter expert who attempts to impart information to

students which is necessary for academic achievement. The strength of this

observation is that two-thirds of the teacher's interaction involve topics outside of the

academic. It is also important that each level is progressive. To attempt to convey

academic information without first having laid the foundation of interpersonal and

substantive interactions would be counterproductive or at best limited.

Rees and Hardy (2000) studied 10 high performing athletes to determine the

greatest contributing factor to their success. Of the four dimensions studied –

emotional, esteem, informational, and tangible – the domain of greatest impact was

support. Example quotes were given to highlight each dimension of support, and its

implications. As students master new skills, the support of an engaged adult who

cares tends to generate student success. Martin and Collie (2019) build on this

research and found student engagement tends to diminish without positive teacher

support during a school year. Once again, teacher trust and commitment through

relationships are key to improving student outcomes.

A second reason why teacher trust with students with learning disabilities is so

vital is because the ways students with learning disability respond to teacher's

feedback. Ramani et al. (2019) observed teachers tend to avoid giving negative

feedback to students because it may result in hurt feelings and impact students'

fragile sense of self. However, teachers should be role models that demonstrate

respect, freely admit mistakes, and remove limitations to promote two-way feedback

(Ramani et al., 2019). As teachers personify a Growth Mindset, they can begin to

normalize student behaviors toward constructive feedback. This basis for corrective

feedback is trust or a "mutual dependencies in the effort to achieve desired outcomes" (Zorkic et al., 2021, p.212). When teachers fail to build relationships and trust, these researchers found students "withdrew from interactions and met only minimal class requirements" (Zoric et al, 2021, p. 211). Teachers must build trust through respectful communication and readiness to support students at the interpersonal, substantive, and pedagogical levels.

Finally, teacher trust helps students with learning disabilities cultivate positive peer relationships. Traditionally students with learning disabilities tend to have problems with peer relations. One meta-analysis claims that 75% of students with learning disabilities have deficits in their social skills (Kavale & Forness, 1996), which is something teacher trust has the potential to change. Students with special education, struggle with likability and popularity often because of cues delivered by the teachers to the class (van der Sande et al., 2018). A perceived lack of capabilities from teachers contributes to a negative corporate identity of those with learning disabilities by their classmates. This is a narrative that may be easily altered by teachers with a strong Growth Mindset who attempt to build strong relationships with struggling students.

Script: Trust is an important mediator for student behavior and belief. In one study students were told not to eat a marshmallow in front of them and if the students waited, they would be given two extra marshmallows (Kidd et al., 2013). The control group persisted three minutes before they consumed the marshmallows while the experimental group continued for 12 minutes. The variance between the two groups was the level of trust. Which led the researchers to conclude, students must believe in the person who is telling them what to do or else they will not possess the motivation or determination to achieve the assigned goal (Kidd et al.).
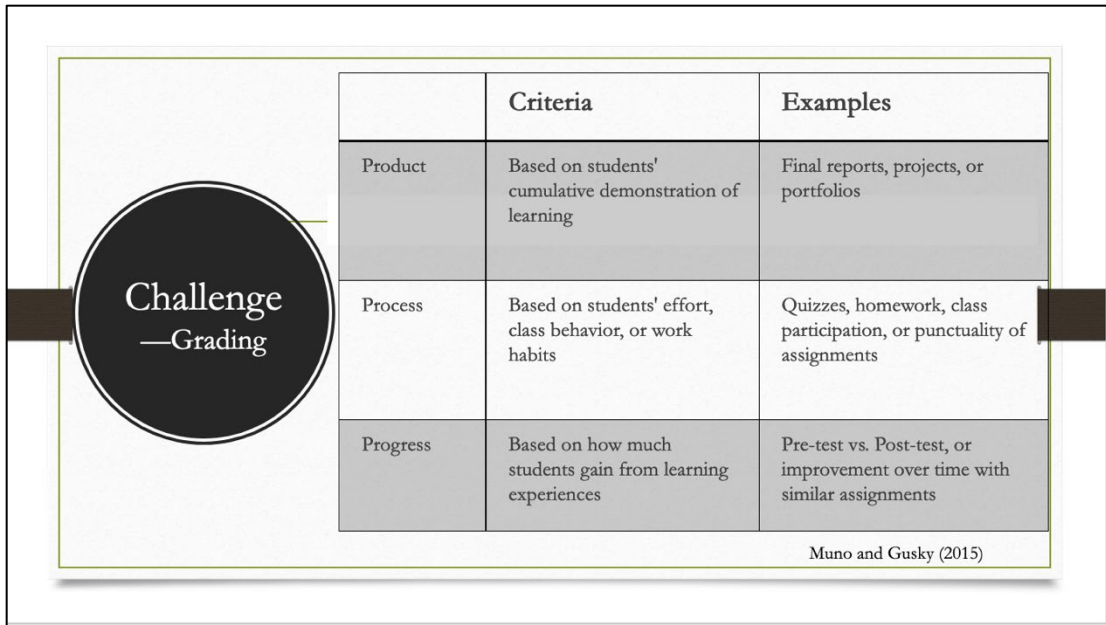
Teacher trust is also required to maintain student participation. A study by Thayer et al. (2018) examined whether wise feedback for at risk ninth grade students would prevent dropout. It was hypothesized that a genuine belief in the student's ability to meet high expectations as communicated by educators, who had received a 90-minute training on feedback, would reduce mistrust and the frequency of warning

signs for dropouts. Quantitative results indicated six students increased significantly in social belonging and trust. Two students who had the highest warning indicators in truancy and disciplinary referrals improved at a slower pace. Two participants, who manifested lower engagement, were students with learning disabilities. Additionally, all subjects increased classwork productivity. It may be concluded that student trust in their teacher's honest and positive feedback is required for student progress.

A third reason teacher commitment is so important is to improve student perception toward their own learning. Wang and Juo (2019) found that constructive teacher perceptions through positive discipline strategies such as setting limits, hearing students out, giving attention, and catching students being productive; help transform students own learning disposition. Even in an interview with the founder of Growth Mindset, Morehead (2012) found that students' self-conceptions change as teachers interact with students highlighting productive struggles and accomplishments. One recommended question to improve student mindset was, "Who had a fabulous struggle today?".

Finally, student posture or position to succeed depends on teacher commitment and contact. Martin and Collie (2019) attempted to track and quantify the negative and positive interactions of 2,079 students in 18 different high schools. They found that when the number of positive teachers-student exchanges outnumber negative exchanges, it resulted in significant academic gains for that student. This study suggests that teacher expectations and belief in their student's ability to achieve may be a huge factor in student motivation to learn. Teachers possess a unique ability

to increase positive interactions with students and have a lasting impact on students'

academic performance.

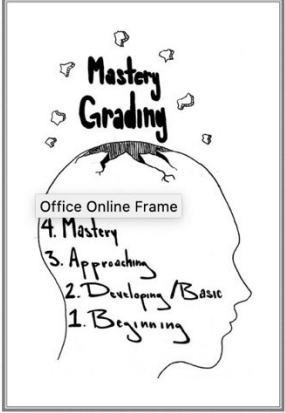|	Criteria	Examples
Product	Based on students' cumulative demonstration of learning	Final reports, projects, or portfolios
Process	Based on students' effort, class behavior, or work habits	Quizzes, homework, class participation, or punctuality of assignments
Progress	Based on how much students gain from learning experiences	Pre-test vs. Post-test, or improvement over time with similar assignments

Muno and Gusky (2015)

Script: The third "C" in relation to helping students with learning disabilities develop a Growth Mindset is **challenge**. Teacher expectations for those with learning disability has been consistently low (de Boer et al., 2018). The rise of mastery grading has challenged the standard practice of assigning a grade that is often disassociated with the standards. Instead, mastery grading seeks to make grades meaningful as well as "valid, reliable, fair, and useful (Muñoz & Guskey, 2015, p. 68). This standards-based approach allows teachers in specific content to select three to five standards by which students could prove mastery while separating grades for achievement, effort, and progress as suggested by Muñoz & Guskey. Mastery is a form of grading, that segments instruction based on the product that is produced, the process involved, and the progress that is made during instruction. Although considered extremely difficult to grade, Reyes et al. (2020) demonstrated that grades in these three areas could be summarized by using a rubric with the following

numeric scale 4) advanced, 3) proficient, 2) basic, and 1) below basic when evaluating the student's mastery of each of the key standards for that course.

Bottge et al. (2015) documented this form of instruction in 25 inclusive classrooms using a form of mastery grading titled Enhanced Anchored Instruction. Using observation and field notes, students with disabilities relied on peers and background information more frequently with explicit instruction from teachers and demonstrated significant progress as teachers gave more conceptual explanations. By allowing students with disabilities to experiment with their own learning strategies and dialoging with peers, students were able to improve their understanding and performance in the classroom. It may be surmised that teachers tend to give explicit instruction because they doubt the ability of students with learning disabilities to formulate their own informative processes.

Abernethy et al. (2021) found mastery-oriented strategies tend to not only improve performance but correlate with a Growth Mindset. These strategies help increase effort, seek help, and exploit failure. This can only be accomplished as teachers focus on a student's personal growth rather than proficiency. Altaleb (2021) believes teachers with a Growth Mindset encourage students to experiment and focus on this personal growth which will permit students to achieve at a higher rate. Mastery-grading places less focus on multiple products, but rather the process and progress in learning. Students begin to experiment with Growth Mindset strategies at deeper levels of learning rather than just replicating a product.

Although mastery-grading is a novel and promising approach, it has met with skepticism. Sometimes teachers do not want to abandon traditional grading because they use grades to regulate behavior. However, standards-based grading allows students multiple opportunities to demonstrate proficiency on certain standards or skills. Studies have shown that this builds Growth Mindset (Knight & Cooper, 2019) particularly in struggling students with learning disabilities (Vatterott, 2015). It may be rationalized that students focus more on the content rather than the grade they earn. With multiple opportunities they learn that failure is not final.

Script: Grading is considered one of the most "bizarre aspects of teaching" (Mahmood & Jacobo, 2019, p. 1545). The claim is made because grading often includes students' academic and behavioral performance rather than mere mastery of a content standard which makes it incapable of communicating meaning beyond the teacher who assigned it. The goal of mastery grading is student proficiency of standards which is supported to reduce grading anxiety and instill mindfulness and pride in the student (Cooper, 2020). The hallmark of this system is self-regulated learning rather than mere performance goals and has demonstrated higher student interaction (Harkin et al, 2016).

Cho et al. (2018)'s study found that reading achievement and student engagement were improved as students set their own goals. When teachers have just a few anchor-standards, it allows students to select key products that illustrate their own mastery. These exhibits demonstrate student understanding and can easily be

placed in a portfolio which shows student growth (Mahmood & Jocobo, 2019).

When using this model, Mahommod and Jocobo (2019) found that ten out of twelve

students felt motivated to improve their own learning.

Knight and Cooper (2019)'s qualitative study attempted to identify emergent

themes regarding standards-based grading from seven teachers in seven different high

schools. Promising themes from this study included intellectual safety and a sense of

belonging. Another surprising theme was the fact it specifically promoted a Growth

Mindset in which students took great risks which included student ownership in the

process of learning.
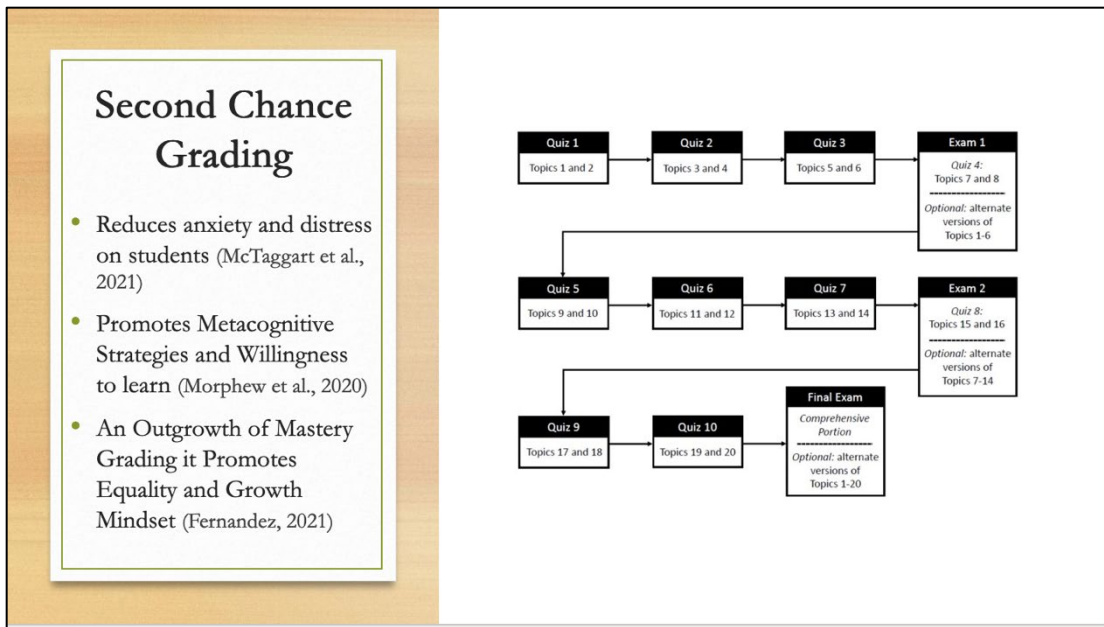
Script: Second chance grading as an outgrowth of standards-based grading and allows students to learn from their previous mistakes and prove mastery of content. According to McTaggart et al. (2021), students were given an opportunity to retake two previous assessments as part of an attempt to reduce classroom anxiety and promote authentic learning. The outcome determined that student well-being improved as 86% of students reported positive outcomes by the end of the course. Students with learning disabilities will benefit from reduced anxiety and the opportunity of learning from their own mistakes.

Mennella (2020) presents a basic schematic chart of second chance grading based on Fernandez's research, which chunks units of instruction while simultaneously allowing students three different occasions to retest over chunks of instruction. He found that this reduces anxiety over grades, credits others for mastery, promotes fairness among different student groups, and is easy to apply. Fernandez

(2021), credited with formulating second chance grading, says it is an outgrowth of standards-based grading and states that it promotes equity. Since special education and lower income students tend to struggle with initial content, this form of grading allows those students to eventually master content without having to overcome original grades that restrict the potential for accomplishment (Feldman, 2019). Students who usually score well initially do so because of prior knowledge which creates a lasting disparity that continues to the end of the course (Feldman, 2019).

Second chance grading helps reverse the ill effects of this learning inconsistency. According to Morphew et al. (2020), when most students at the secondary level are left to their own devices, they passively study notes and lectures using ineffective strategies such as cramming. Second chance testing helps students retake part of or all of an assessment and rewards their efforts to experiment with learning strategies. Debriefs by teachers and peers allow students to develop a Growth Mindset and tends to produce positive learning effects and lower anxiety (Morphew et al., 2020).

Script: Another aspect of the challenge for teachers is not only the type of grading they give students but their own feedback practices. Nicoli (2014) gives the following list of phrases that tend to promote a fixed mindset in students (p. 51). These feedback statements, although well intended, influence a student's belief and have a culminative and permanent effect (Rattan et al., 2012).

Jacovidis et al. (2020) divided teacher feedback into two -- either person or process-oriented praise. The person-oriented phrase is limited to a fixed mindset or innate qualities that rarely change while process-oriented praise highlights the students' efforts and persistence when applied to strategies. Pitt et al. (2020) reviewed current research, highlighting the tension of using praise language, with those who struggle to achieve. Although praise can be an effective means to create a Growth Mindset in students, teachers must learn a form of praise literacy that helps them use this technique effectively. At the secondary level this is especially important as those

messages depend on context and may be misinterpreted by students. Teacher

expectations towards those with learning disabilities or at risk of failure often receive

praised motivated by sympathy and may unintentionally reinforce stereotypes

(Amemiya & Wang, 2018).

Growth Mindset Feedback Tool (Zeeb, et al., 2019).

Quality of Student's Work	Teacher's Feedback
If a student struggles despite effort:	Encourage the student to recognize the failure as an opportunity to learn, suggest new strategies to solve the problem, praise the student for investing so much effort, etc.
If a student succeeds with effort:	Praise the student's effort and persistence, praise the student's behavior (e.g., time management, strategies), point out how much progress the student has made, etc.
If a student succeeds without much effort	Suggest a task that is more challenging, ask the student to help others with the task, look for another skill that the student can work on etc.
If a student does not succeed due to a lack of effort	Explore what barriers the student is facing and offer help to overcome them, talk about more attractive learning goals, suggest new strategies, etc.
If a student lacks specific skills to improve:	Suggest new strategies, give further information, encourage the student to try and not to be afraid of mistakes, etc.
If a student makes progress:	Praise the student's strategies and hard work, remind the student to the difficulties at the beginning, point out how much progress the student has made, etc.

Script: This chart should help teachers produce feedback that produces a Growth Mindset rather than a grade that does little to communicate expectations or means of improvement. For some educational researchers, grading may lower student achievement. Grades were not used until the 1940's and often lack either evaluative or descriptive feedback necessary to help inspire students in their efforts to improve (Schinske & Tanner, 2014). Mahmood and Jacobo (2019) suggest teachers stop grading instead start using a rubric. These researchers contend that rubrics may be used to develop individualize education program goals such as the sliding scale. Grading is not a one-size fits all approach and, as such, teachers must work to craft equitable forms of instruction.

According to Guskey (2019), when teachers gave comments rather than grades on the same assignment, those with comments significantly improved the next

assignment. Guskey concluded by cautioning teachers that well designed formative assessments are insufficient unless coupled with direct and specific feedback.

Boaler and Confer (2017) calls these feedback practices "assessments for learning" (p. 2) arguing that teachers often use summative assessments in a formative way. Assessment for learning coupled with specific Growth Mindset feedback may transform students' perception about themselves (Boaler & Confer). Often students with Growth Mindset welcome critical feedback as specific feedback helps students make sense of their mistakes (Schroder et al., 2017).
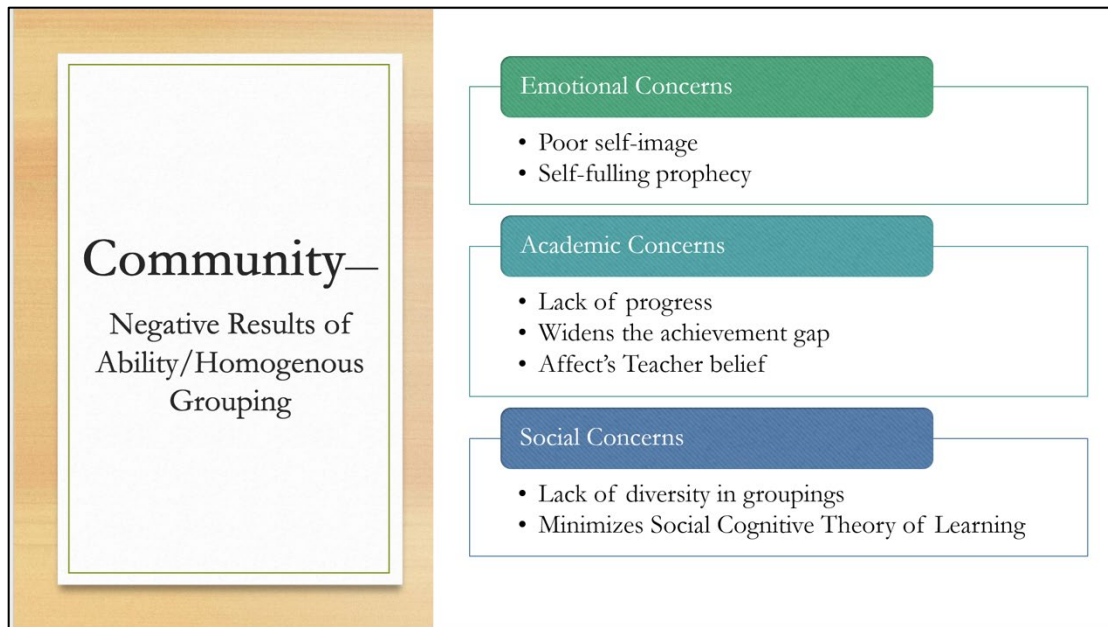
Script: The final "C" of this module that will help students with learning disabilities develop a Growth Mindset is **community**. Ability grouping is placing students into different classrooms based on initial achievement skills or abilities so teachers can create a uniform learning environment to give target instruction (Steenbergen-Hu et al., 2017). McGillicuddy and Devine (2018) claim ability grouping for students is a form of "symbolic violence" as it creates "academic hierarchies" within the school (p. 89). Spina (2019) claims the use of data has normalized this process of labeling and confining student to a particular ability group to receive specialized instruction. Ability grouping also termed tracking, attainment grouping, or homogenous grouping, is currently on the rise in schools across the United States especially in high schools (Bolick & Rogowskey, 2016).

One of the primary concerns for students with learning disabilities is that this group reinforces and augments stereotype threats and the stigma depending on how these students are grouped. Neumann (2021) sees this system of grouping as a form of emotional trauma. He questions the practice of basing educational services on the insecurities of students and identifies this structure as a natural consequence of "datafication" (p.1).

Academically, students confined to these low attainment groups tend to fall behind their non-disabled peers (Higgins et al., 2016). Researchers suspect this is related to teachers' low expectations of these groups (Mazeond et al., 2018). Students with learning disabilities in those targeted groups often move slower and cover less content (Bolick & Rogowsky, 2016).

Socially, these ability groupings limit the potential for students to improve their individual agency which comes by observation and imitation of peers (Stefanidis et al., 2019). When students with learning disabilities are denied access to their non-disabled peers, they are deprived of the social aspects of learning that would lead to mastery of their learning goals (Boardman et al., 2016). These homogenous groups lack diversity and create groups that are filled with students who either have low-socio economic backgrounds, racial and ethnic minorities (Francis et al., 2017) which create social justice issues. Taylor et al. (2016) sees ability grouping as creating a "double disadvantage" (p. 2).

Script: Community conveys the idea that students interact with their peers to master novel concepts. Sheffler et al. (2020) found that peers with a Growth Mindset helped to augment the perceptions of task completion and value of learning assignments. As these Growth Mindset classmates completed assignments, those with a fixed mindset showed increased levels of tenacity and perseverance. This reinforces the notion that learning is a collective and social phenomenon and that students learn by observation and imitation (Stefanidis et al., 2019). Diversity in the classroom remains intact, permitting students to learn from one another unlike homogenous groupings (Francis et al., 2017).

Zhang et al. (2020) found that students' feedback and praise helps improve academic motivation. This comparative study found that peer praise was a powerful means to change student's fixed mindset, especially when it was process-focused praise.

Limeri et al. (2020) interviews and survey results showed that when students watched other students either fail or overcome academic difficulties, their view of intelligence changed. The value of this study is that it shows students' mindsets may be influenced by the social interactions they have with their peers. Further it may be implied that student's mindset may change apart from an intervention and that not only do student's own academic experience affect their views on intelligence but the observed differences among their peers. This illustrates the power of collaborative learning and need for those with learning disability to associate with students of higher abilities to receive encouragement and instruction apart from teachers.

Script: In conclusion to this series, please know that students with learning disabilities need secondary teachers who are willing to address the cognitive and emotional issues that have continued with them for many years. This requires teachers who are willing to make changes that may seem small or insignificant but have the potential to affect sweeping changes in the life trajectories of this population of students.

In 1963, Edward Lorenz, an MIT graduate and meteorologist, presented a unique hypothesis to the New York Academy of Science asking the question "Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?" (Vernon, 2017, p. 130). Lorenz used a computer to simulate a weather pattern based on a formula of his creation and in that formula, he rounded the number .506127 to .506. He never imagined that "one one-thousandth of 1 percent" would make such a difference, but it

did (Batterson, 2015, p. 103). What was the mathematical equivalent of a puff of wind would eventually turn into a catastrophic storm (Batterson, 2015).

      Chemicals, commitment, challenge, and community may seem as though they are minor details, yet the research presented in this module suggest they are significant. This should generate a sense of hope when confronted with what some may consider a difficult task. It is my sincere hope this professional development will provide workable solutions and inspiration to close the achievement gap, while reversing the ill effects of the discrepancy model of identification, Learned Helplessness, and learning anxiety.

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2016-Present   Special Education Teacher
                  Spencer County Board of Education
                  Taylorsville, Kentucky

2013-2016   Instructional Assistant
                  Spencer County Board of Education
                  Taylorsville, Kentucky

<u>HONORS</u>

May 2021   Joshua Thomas Award for Excellence in Communication
                  United States Army Chaplain Center and School
                  Fort Jackson, South Carolina