INVESTIGATING EVIDENCE-BASED PRACTICES AND INTERVENTIONS USING MULTIFACETED LEARNING THEORY FOR STUDENTS IN A SPECIAL EDUCATION SELF-CONTAINED CLASSROOM

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THE PROBLEM STATEMENT

Low diversity rate in research; primarily, only White students were represented

No agreement for what constitutes effective evidence-based practices and interventions

Difficulty in assessing comprehensive programs

RESEARCH QUESTIONS

Research Question 1

How did experienced teachers use the Tennessee Educator Acceleration Model (TEAM) General Educator Rubric to influence the use of evidence-based practices and interventions in a diverse special education self-contained classroom investigated through interviews?

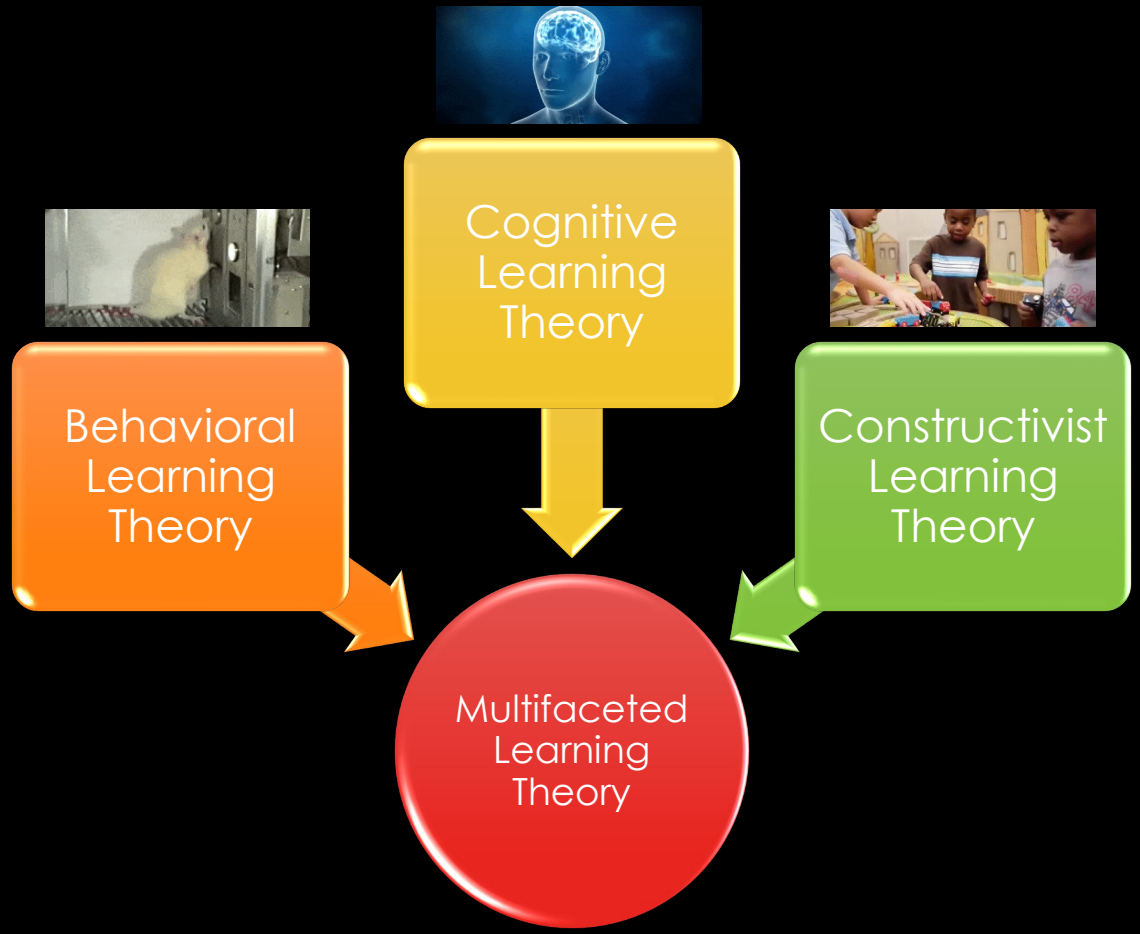
Research Question 2

How did experienced teachers in a diverse special education self-contained classroom apply the multifaceted learning theory in a lesson aligned to Tennessee state standards investigated through observations?

PURPOSE STATEMENT

The purpose of this qualitative case study was to use the TEAM General Educator Rubric to investigate how experienced teachers may have used the multifaceted learning theory when implementing evidence-based practices and interventions in a diverse special education self-contained classroom to help students access Tennessee state standards.

THEORETICAL FRAMEWORK



Multifaceted Learning Theory

- Teacher-centered, Task-analysis, Conditioned, Expectations, Measurable Goals, Sequenced, Environmental Stimuli, Reinforcements and Consequences
- Complexity, Self-guide, Organized, Solutions, Relevance, Connections, Personalized, Developmentally Appropriate, Self-reflect
- Perspectives, Social Learning, Varied Presentations, Discovery, Application

DATA ANALYSIS

Questionnaire

- Google Forms
- Special education teacher with:
  - Three or more years of experience
  - One or more male/female students
  - Students with two or more ethnicities/races

Semi-Structured Interview

- Zoom interviews
- Open coding by identifying repeated words and phrases
- Grouped open codes into axial codes creating categories
- Used axial codes to complete the selective codes and themes to answer Research Question 1

Document Analysis

- Open coding by highlighting repeated words and phrases
- Categorized the open codes into behavioral learning theory, cognitive learning theory, or constructivist learning theory

Observations

- Transcribed observations and categorized what I observed to the indicators on the TEAM General Educator Rubric
- Summarized the number of times participants used learning theory strategies

RESEARCH QUESTION 1

How did experienced teachers use the Tennessee Educator Acceleration Model (TEAM) General Educator Rubric to influence the use of evidence-based practices and interventions in a diverse special education self-contained classroom investigated through interviews?

Participants and their Caseload's Demographics

				Students' Demographics						
Participant	Special Education Experience	General Education Experience	Grades	Caseload	Male	Female	White	Black	Asian/ Pacific Islander	Hispanic
1	5	0	3-5	12	11	1	10			2
2	33	0	18-22	10	4	6	3	2		5
3	19	0	7-9	9	3	6	8	1		
4	11	0	6-8	12	7	5	8	4		
5	22	0	9-12	8	5	3	7	1		
6	6	0	K-5	7	4	3	6	1	1	
7	40	0	K-5	9	8	1	6	2		1
8	9	0	9-12	7	4	3	3			1
9	8	3	6-8	6	5	1	5	1		

92 Open Codes → 13 Axial Codes → 5 Selective Codes/Themes

Axial Codes	Selective Codes/Themes
Conditioned Relevance Complexity Measurable Goals Varied Presentations Social learning	Teachers used activities and materials provided by the school and beyond the curriculum to keep students' attention with relevant, interactive, and appropriately complex learning opportunities to support the lesson's objective.
Task analysis Teacher centered Organized	Teachers used visuals, examples, and labels as they modeled the thinking process when presenting instructional content with concise communication, logical sequence, and all the essential information.
Discovery Reinforcement	Teachers used reinforcements to motivate students while developing learning experiences with inquiry, exploration, and content relevant to the students.
Personalized	Teachers used their knowledge of students to differentiate instruction while displaying an understanding of each student's anticipated learning difficulties.
Connections	Teachers used their content knowledge to connect key concepts and ideas to other powerful ideas.

Theme 1

TEACHERS USED ACTIVITIES AND MATERIALS PROVIDED BY THE SCHOOL AND BEYOND THE CURRICULUM TO KEEP STUDENTS' ATTENTION WITH RELEVANT, INTERACTIVE, AND APPROPRIATELY COMPLEX LEARNING OPPORTUNITIES TO SUPPORT THE LESSON'S OBJECTIVE.

- 9/9 (100%) participants shared for questions 1 and 2 during the semi-structured interview, how they used a school purchased curriculum
  - 67% of the participants used Unique Learning System
  - The remaining 33% of the participants used Handwriting Without Tears, Project Search Curriculum, or Environmental Print.
- 4/9 (44%) participants described how they made their lessons relevant and interactive to help keep students engaged.
  - Participant 9 stated, "I use Blooket because it makes it's an interactive game for vocabulary words."

Theme 2

TEACHERS USED VISUALS, EXAMPLES, AND LABELS AS THEY MODELED THE THINKING PROCESS WHEN PRESENTING INSTRUCTIONAL CONTENT WITH CONCISE COMMUNICATION, LOGICAL SEQUENCE, AND ALL THE ESSENTIAL INFORMATION.

- 9/9 (100%) participants shared for questions 3 and 4 during the semi-structured interview, how they used visual throughout their lesson to support students' ability to communicate and have choices.
  - Participant 5 shared, "We use picture cards for vocabulary and pictures on communication boards that they have on their desk. I use visuals for communication purposes and visual learning."
- 5/9 (56%) participants explained how they modeled the skill, practiced the skill, and provided students with independent practice or an assessment.
  - Participant 5 stated, "I follow the I do, We do, You do model for each lesson."
- 5/9 (56%) participants shared how they use the same sequence or same content.
  - Participant 7 and 9 shared how they follow the lesson plan provided through Unique Learning System

Theme 3

TEACHERS USED REINFORCEMENTS TO MOTIVATE STUDENTS WHILE DEVELOPING LEARNING EXPERIENCES WITH INQUIRY, EXPLORATION, AND CONTENT RELEVANT TO THE STUDENTS.

- 9/9 (100%) participants shared for questions 5 and 6 during the semi-structured interview, how they used reinforcements and relevance to motivate students.
  - Participants 3 and 4 shared how they built relationships with their students
  - Participants 1, 2, 5, 7, and 9 shared how they reinforced or rewarded their students with lots of positive praise
  - Participants 1, 4, 5, 6, and 7 stated they rewarded their students' efforts by giving them a break or free time

Theme 4

TEACHERS USED THEIR KNOWLEDGE OF STUDENTS TO DIFFERENTIATE INSTRUCTIONAL METHODS WHILE DISPLAYING AN UNDERSTANDING OF EACH STUDENT'S ANTICIPATED LEARNING DIFFICULTIES.

- 7/9 (78%) participants shared for questions 7 and 9 during the semi-structured interview, how they personalized lessons to fit the needs of their students and provide ample opportunities for success
  - Participant 2 shared, "I use their names and their jobs in the math problems because they are very interested when the work is about them."
  - Participant 3 stated, "I get iffy about doing a lesson because I think it might be boring for them. I let them choose the experiments they wanted to do."

Theme 5

TEACHERS USED THEIR CONTENT KNOWLEDGE TO CONNECT KEY CONCEPTS AND IDEAS TO OTHER POWERFUL IDEAS.

- 9/9 (100%) of participants shared for question 8 during the semi-structured interview, how they connected content areas, such as Reading, Math, Science, Social Studies, and life skills.
  - Participants 1, 3, 4, 5, 6, and 9 explained how they taught foundational reading skills to support students reading math problems, reading directions for science experiments, and reading current events for social studies, as well as accessing their community
  - Participant 3 said, "We did an experiment with apples where they had to count and divide. There was also a non-fiction article we read that went along with the lesson."

RESEARCH QUESTION 2

How did experienced teachers in a diverse special education self-contained classroom apply the multifaceted learning theory in a lesson aligned to Tennessee state standards investigated through observations?

22 Open Codes → 3 Categories

Categorized - 298 learning theory strategies

I FOUND EVIDENCE OF TEACHERS USING AND INTEGRATING ALL THREE TYPES OF LEARNING THEORIES REPRESENTED IN MULTIFACETED LEARNING THEORY.

Instructional Plans

- 8/8 (100%) participants used behavioral learning theory strategies eight time to explain the objective of the lesson to the students at the beginning and end of the lesson.
  - Participant 5 wrote on the board, "I can identify energy sources and describe their use in daily life. Energy sources: 1. Batteries; 2. Electricity; and 3. Solar."

Assessments

- 3/8 (38%) participants used behavioral learning theory strategies two times and cognitive learning theory strategies one time to assess with clear measurement criteria.
  - Participant 2 used an assessment checklist to help students review and reflect on their basic job skills as well as their own specific jobs skills for where they were currently working.

Expectations

- 8/8 (100%) participants (100%) used behavioral learning theory strategies eight times and cognitive learning theory strategies three times to create learning opportunities to experience success while setting high and demanding expectations for all students.
  - Participant 6 set up each students' device for communication with the color response orange. Participant 6 asked, "What color is this?" Three out of four students in Participant 6's classroom had only orange as their only choice.

I FOUND EVIDENCE OF TEACHERS USING AND INTEGRATING ALL THREE TYPES OF LEARNING THEORIES REPRESENTED IN MULTIFACETED LEARNING THEORY.

Managing Student Behaviors

- 8/8 (100%) participants used behavioral learning theory strategies 17 times to manage student behaviors by setting clear rules for learning and behaviors, overlooking inconsequential behaviors, and dealing with disruptions promptly.
  - The timer went off and Participant 8 said, "I need you to get your work boxes and come to the table." Once all the students were at the table, Participant 8 continued, "I need your eyes. I need your eyeballs on me. You can sit at your desk, or you can sit with me."

Environment

- 8/8 (100%) participants used behavioral learning theory strategies five times and constructivist learning theory strategies six times to make supplies and resources readily available and arranged the classroom to promote individual and group learning.
  - Participant 7 had students split into three groups to complete three rotations including writing, calendar skills, and social studies.

Respectful Culture

- 7/8 (88%) participants used behavioral learning theory strategies 11 times to establish caring and respectful interactions between teacher to student and student to student to develop positive relationships and interdependence.
  - Participant 2 stated, "Do we have to like everybody we work with?" Students responded, "No." Participant 2 continued, "But you have to be what?" Students responded, "Respectful." Participant 2 concluded, "Right! Sometimes you just have to act like you like them even if you don't."

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Standards and Objectives

- 6/8 (75%) participants used behavioral learning theory strategies 4 times and cognitive learning theory strategies 4 times to clearly and explicitly communicate all learning objectives while connecting to what students previously learned, student's life experiences, and other content areas.
  - Participant 1 asked students, "What letter are we working on today?" Student responded, "R" Participant 1 asked, "What are you doing with your R?" Student 1 answered, "Gluing it." Student 2 answered, "Writing." Student 3 answered, "Stickers."

Motivating Students

- 7/8 (88%) participants used behavioral learning theory strategies five times and constructivist learning theory strategies six times to develop learning experiences where inquiry, curiosity, and exploration are valued while also reinforcing and rewarding students' effort.
  - Participant 8 began the lesson by saying, "Help! Help me! We have been talking about seasons. What in the world is a season? We talked about them this morning." Student responded, "There are four of them." Participant 8 continued, "That's right. Does the weather stay the same?" Student responded, "No. It changes"

Presenting Instructional Content

- 8/8 (100%) participants used behavioral learning theory strategies 14 times and cognitive learning theory strategies 21 times to present instructional content with visuals, examples, models of thinking, labels for new concepts paired with concise communication, a logical sequence for instruction, and all essential information.
  - Participant 4 played Money Bingo and showed a student a visual of a dime to see if they had it on their card. The student found the dime on their card and placed a token on it.

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Lesson Structure and Pacing

- 8/8 (100%) participants used behavioral learning theory strategies 13 times and cognitive learning theory strategies 3 times to pace lessons and routines for individual students who progress at different learning rates, so no instructional time is loss.
  - Participant 4 worked step by step during whole group instruction keeping students on tasks by having them continuously participate.
  - Participant 7 used timers to maintain 15-minute lessons for each small group rotation.

Activities and Materials

- 8/8 (100%) participants used behavioral learning theory strategies 11 times, cognitive learning theory strategies 17 times, and constructivist learning theory strategies 15 times to implement challenging and relevant activities supporting the objective with curriculum and non-curriculum resources to sustain the students' attention.
  - Participant 6 included four videos of different songs to reinforce learning about the color orange by identifying what is orange, how orange is different from other colors, and how to spell orange.

Questioning

- 8/8 (100%) participants used behavioral learning theory strategies 28 times and cognitive learning theory strategies 21 times to ask varied, high-quality questions to assess and advance students' learning.
  - Participant 1 asked, "Tell me the pictures that start with the letter R." Student responded, "robot, rhino, and rainbow."
  - Participants 1, 2, 3, 4, 5, 6, 7, and 8 provided students five to 15 seconds of wait time before providing support or repeating the question.

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Academic Feedback

- 8/8 (100%) participants used behavioral learning theory strategies 19 times and cognitive learning theory strategies five times to give frequent feedback and prompts to accomplish the goal of the lesson.
  - Participant 2 said, "Pay attention to the minutes. The little hand goes first. It's important to tell the time in the correct order. It's not 17:8." The student responded, "Oh yeah! Its 8:17."

Grouping Students

- 8/8 (100%) participants used constructivist learning theory strategies nine times to group students in a way to support students' understanding and learning efficiency.
  - Participant 7 had three groups of students. One group had one student who required the most support. The other two groups had two students each with one male and one female.

Teacher Content Knowledge

- 4/8 (50%) participants used behavioral learning theory strategies six times and cognitive learning theory strategies three times to highlight key concepts to connect to other powerful ideas by teaching limited content in depth for the development of understanding.
  - Participant 1 asked, "Why is R so important to you?" Student responded, "because my name starts with R!"

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Teacher Knowledge of Students

- 8/8 (100%) participants used behavioral learning theory strategies 4 times and cognitive learning theory strategies 12 times to display and understand of each students' anticipated learning difficulties through differentiated instruction while incorporating student interests and cultural heritage.
  - Participant 3 had a student whose first language was Spanish. Participant 3 and the teaching assistant learned phrases to communicate with the student, but also used the translator on the Chromebook.

Thinking

- 3/8 (38%) participants used cognitive learning theory strategies 2 times and constructivist learning theory strategies 2 times to have students analyze and explain their thinking as well as apply their learning into real life scenarios.
  - Participant 8 said, "Let's talk about the seasons. I am building a snowman. It is super cold outside. Why in the world would you want to be outside when you can be inside with hot chocolate?" Two students responded, "Winter!" and five other students responded with their picture vocabulary card for winter.

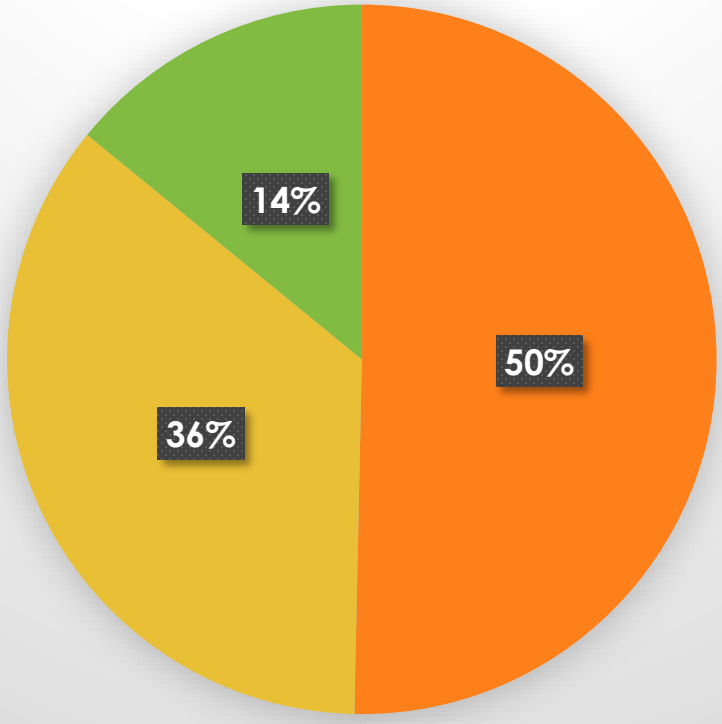
Problem Solving

- 5/8 (63%) participants used cognitive learning theory strategies 8 times and constructivist learning theory strategies 4 times to categorize, draw conclusions, observe, predict outcomes, improve solutions, generate ideas, and identify relevant and irrelevant information.
  - Participant 7 had a student who was non-verbal to categorize cubes into seven different containers by their colors.

I FOUND EVIDENCE OF TEACHERS USING AND INTEGRATING ALL THREE TYPES OF LEARNING THEORIES REPRESENTED IN MULTIFACETED LEARNING THEORY.

Participants Use of Learning Theory Strategies

I observed teachers apply learning theory strategies 298 times



- Teacher-centered (22)
- Task-analysis (20)
- Conditioned (36)
- Expectations (15)
- Measurable Goals (15)
- Sequenced (10)
- Environmental Stimuli (10)
- Reinforcements and Consequences (22)
- Complexity (16)
- Self-guide (5)
- Organized (17)
- Solutions (6)
- Relevance (26)
- Connections (16)
- Personalized (15)
- Developmentally Appropriate (13)
- Self-reflect (1)
- Perspectives (4)
- Social Learning (14)
- Varied Presentations (8)
- Discovery (13)
- Application (3)

IMPLICATIONS FOR PRACTICE

- State approved evaluation tools could focus on areas of the instructional TEAM rubric to monitor comprehensive programs used in special education self-contained classrooms
- Or use multifaceted learning theory to directly highlight key areas to observe in comprehensive program for a special education self-contained classroom

Concept Rubric	
Instructional TEAM Rubric	**Focus**
Instructional Plans	Measurable Goals (Behavioral)
Assessments	Measurable Goals (Behavioral) Self-reflect (Cognitive)
Expectations	Expectations (Behavioral) Personalized (Cognitive)
Managing Student Behaviors	Conditioned (Behavioral) Expectations (Behavioral) Reinforcements/ Consequences (Behavioral)
Environment	Environmental Stimuli (Behavioral) Social Learning (Constructivist)
Respectful Culture	Conditioned (Behavioral)
Standards and Objectives	Measurable Goals (Behavioral) Connections (Cognitive)
Motivating Students	Reinforcements/ Consequences (Behavioral) Discovery (Constructivist)
Presenting Instructional Content	Teacher-centered (Behavioral) Task-analysis (Behavioral) Organized (Cognitive) Relevance (Cognitive)
Lesson Structure and Pacing	Conditioned (Behavioral) Developmentally Appropriate (Cognitive)
Activities and Materials	Measurable Goals (Behavioral) Conditioned (Behavioral) Complexity (Cognitive) Relevance (Cognitive) Varied Presentations (Constructivist) Discovery (Constructivist)
Questioning	Teacher-centered (Behavioral) Task-analysis (Behavioral) Conditioned (Behavioral) Measurable Goals (Behavioral) Sequenced (Behavioral) Self-guide (Cognitive) Organized (Cognitive) Relevance (Cognitive) Developmentally Appropriate (Cognitive)
Academic Feedback	Teacher-centered (Behavioral) Personalized (Cognitive)
Grouping Students	Social Learning (Constructivist)
Teacher Content Knowledge	Teacher-centered (Behavioral) Task-analysis (Behavioral) Connections (Cognitive)
Teacher Knowledge of Students	Task-analysis (Behavioral) Complexity (Cognitive) Personalized (Cognitive)
Thinking	Application (Constructivist)
Problem Solving	Organized (Cognitive) Solutions (Cognitive) Relevance (Cognitive) Perspectives (Constructivist)

Multifaceted Learning Theory Concept Rubric	
Behavioral Learning Theory Strategies	Teacher-centered Task-analysis Conditioned Expectations Measurable Goals Sequenced Environmental Stimuli Reinforcements/Consequences
Cognitive Learning Theory Strategies	Complexity Self-guided Organized Solutions Relevance Connections Personalized Developmentally Appropriate Self-reflect
Constructivist Learning Theory Strategies	Perspectives Social Learning Varied Presentations Discovery Application

RECOMMENDATIONS FOR FUTURE RESEARCH

Interview school leaders on how they evaluate and monitor fidelity of implementation

Research professional development pertaining to special education teachers applying multifaceted learning theory

Research different state approved evaluation tools

Observations in different states with a common evaluation tool

Observe classrooms in specific grade bands

Multiple researchers complete this study together

QUESTIONS