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Improving Study Outcomes for Students with Executive Functioning Challenges

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Introduction

- ▶ Some college students with learning disabilities have difficulties with executive functioning (EF) skills
- ▶ EF can incorporate skills such as attention, working memory, planning, time management, self-monitoring, and goal setting (Barkley, 2012)
- ▶ Lack of literature on how EF strategies may impact college students (e.g., Dimond & Lee, 2011)
- ▶ Recommendations of EF strategies can include but are not limited to computer training to improve working memory, mindfulness training, and goal management training or GMT (Davis et al., 2011, Dimond & Lee, 2011)

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Introduction Cont.

- ▶ Additional strategies such as those with behavioral foundations have been noted as positively improving EF outcomes for students with disabilities
 - ▶ Self-determination instruction, self-management, self-monitoring, systematic instruction (Cooper, Heron, and Heward, 2007; Durlak, Rose, & Bursuck, 1994; Wehmeyer & Palmer, 2000)
- ▶ What we do know about students who have problems with EF
 - ▶ Higher levels of distraction and engaging in purposeful self-serving behaviors
 - ▶ Lower retention rates compared to peers who do not have such difficulties (Parker & Boutelle, 2009)

Purpose

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- ▶ Determine the effects of a task analysis and goal setting intervention to improve study skills and task completion
- ▶ As a part of the study, student perceptions of how the intervention impacted their study skills were also evaluated

Participants

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- ▶ Mary- female, 20-year-old, sophomore, difficulty with planning, time management, and self-regulation, often found completing assignments overwhelming
 - ▶ Major child care
- ▶ Caitlyn- female, 22-year-old, senior, often distracted, frequently did not finish tasks, difficulties with time management, and planning
 - ▶ Major early childhood education
- ▶ Arthur- male, 21-year-old, sophomore, biggest challenge was attention and task completion
 - ▶ Major recreation and leisure studies

Participants cont.

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- ▶ All participants were a part of the university's support program designed to assist students with learning disabilities
- ▶ As a part of this program interventions and supports are provided using a scaffold. For example, intense interventions at the beginning and fading those away as students progress through the program
- ▶ Intervention included- mandatory study hall time, tutors, assistive technologies, and an online retention tool to aid in retention of accepted cohorts
- ▶ Each year the program accepted a cohort of 10 students and over 50 were enrolled in the program at the time of the study

Setting and Materials

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- ▶ The study took place in a large study hall designed for the program between the times of 7:00 am - 5:00 pm
- ▶ Study sessions were 1 hour in length
- ▶ Materials included:
 - ▶ Study planning sheet
 - ▶ Task analysis
 - ▶ iPod Touch
 - ▶ Data collection sheets
 - ▶ MacBook Pro with Excel
 - ▶ Student study materials

Dependent and Independent Measures

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- ▶ Dependent Measures
 - ▶ Percentage of steps correct via a task analysis
 - ▶ Percentage of tasks completed during the study session
- ▶ Independent Measure
 - ▶ 11-step task analysis, system of least prompts, self-monitoring, and goal setting attributes

Experimental Design

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- ▶ A single subject multiple probe across participants (Kennedy, 2005) was used to evaluate the impact of the intervention on student performance

General Procedures

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- ▶ All students had assigned mentors as a part of their program requirements
- ▶ Mentors assisted students in organizing their study sessions and were primary data collectors. All mentors were trained to collect data and implement intervention strategies by the primary investigator*
- ▶ During baseline students were given a study planning sheet that resembled the task analysis. Mentors were asked to read a script in which that asked students to plan out their study session and establish a starting, mid, and ending point
- ▶ During this phase mentors collected data using the task analysis and determined what steps were completed and the percentage of tasks completed by students. A single opportunity format (Collins, 2017) was used and no prompting was provided

General Procedures

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- ▶ During intervention, students were trained to use the task analysis, an iPod touch, a study guide planning sheet, and a Macbook Pro with a pre-made excel sheet for them to enter their data
- ▶ Once students were trained to use materials, mentors only served to facilitate the beginning of the study session as they did during baseline (a step that was already in place as a part of the supports provided by the student program)
- ▶ Once students established their goals, the mentor would set an alarm using the iPod touch for students. The alarm was used to indicate to students their mid-point during the study session

General Procedures Cont.

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- ▶ Students then completed the remainder of the task analysis, graphed their data, and then reflected on their work
- ▶ A system of least prompts was used to assist students in completing the steps to the task analysis during the study session, if needed

Memo: _____
 Date: _____
 Participant ID: _____

Student Steps	Completed (+) Not Completed (-)	Prompt needed to complete (I, V, VG, VM)	Notes
1. Write your objective(s)/how many tasks you plan to complete in your planner			
2. Identify which task you will start on in notes section			
3. Identify a mid-point for your selected task(s) in your notes section			
4. Identify a stopping/ending point for task(s) in notes section			
5. Begin working on your selected starting point			
6. Did you make it to your mid-point?			
7. Did you make it to your end-point?			
8. Write down how many tasks you have completed today in notes section.			
9. Complete mini self-reflection: What did I do well, Did I meet my goals for today, What could I have done better?			
10. Graph the number of steps/tasks you have completed from this checklist in your excel file.			
11. Meet with mentor to write down and plan on what can be worked on for the next study session			

Mini Reflection

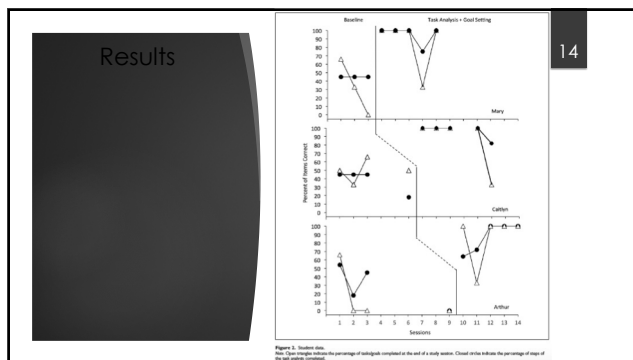
What did I do well today during my study session?

Did I meet my targeted goals? Did I complete all the tasks I set out to complete, why or why not?

What could I have done better today during my study session?

Key: I= Independent Response, V= Verbal Prompt, VG= Verbal + Gestural Prompt, VM= Verbal + Model Prompt

Figure 1. Task analysis/student self-reflection checklist



Results Cont.

- ▶ Interrater reliability was taken for 33% of baseline and 20% for intervention for Mary
 - ▶ 25% and 20% for both Caitlyn and Arthur
 - ▶ 100% score across all participants
- ▶ The same percentages were reflected for procedural reliability
- ▶ Social Validity Likert Scale (1-5, 5 being strongly agree)
 - ▶ Mentor helpfulness ($M=4$)
 - ▶ Setting goals helped with productivity ($M=4.7$)
 - ▶ Intervention assisted with staying in task ($M=4$)
 - ▶ Would like to use this intervention in future courses ($M=4.7$)

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Discussion

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- ▶ Extends literature by demonstrating positive effects of using self-monitoring, goal setting, and systematic instructional strategies for this student population
- ▶ Demonstrated a functional relation
- ▶ Easy to use and cost efficient
- ▶ Self-evaluating or graphing seemed to be important particularly for Arthur
 - ▶ "I can do better next time"
- ▶ Use of mentors and the elephant in the room
 - ▶ Lack of generalization and maintenance data
- ▶ Is there a relationship between the intervention and academic outcomes?
