

# Metacognitive Coaching as a Means to Enhance College and Career Success for Students With Executive Function Disorders

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Christine Parsons  
*University of Central Florida*

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METACOGNITIVE COACHING AS A MEANS TO ENHANCE COLLEGE  
AND CAREER SUCCESS FOR STUDENTS WITH EXECUTIVE FUNCTION  
DISORDERS

by

CHRISTINE A. PARSONS

A thesis submitted in partial fulfillment of the requirements  
for the Honors in the Major Program in Science Education  
in the College of Education  
and in The Burnett Honors College  
at the University of Central Florida  
Orlando, Florida

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Thesis Chair: Matthew Marino, Ph.D.

## **ABSTRACT**

Preparing undergraduate students for careers in science, technology, engineering, and mathematics (STEM) fields continues to be a national priority. This project analyzed the effects of virtual metacognitive academic coaching between graduate student coaches and undergraduate STEM majors with Executive Function disorders at a large, four-year university.

The project team analyzed the persistence of the undergraduate students in their major, as well as the graduate students' abilities to transfer the coaching experiences to K-12 settings. A mixed-methods design evaluated qualitative (i.e. student/coaches' surveys and interviews) outcomes for undergraduate STEM majors and for graduate students. The goal of this project is to develop iteratively a model of scalable supports that can be utilized to support undergraduates with disabilities in STEM majors' at large universities such as UCF.

Graduate student coaches paired with undergraduate STEM majors with Executive Function disorders (n=26) worked collaboratively throughout one semester to develop strategies that supported the success of the undergraduate students' coursework. Both coaches and students provided examples of positive effects of the academic coaching process that supported student course work and created experiences that the graduate students could use in a K-12 setting.

## DEDICATION

First, I would like to dedicate this work to my thesis chair, Dr. Matthew Marino.  
Your passion, intelligence, guidance, patience, and sense of humor allowed me to flourish.

Next, to my children; Tom, Tim, Stephen, and Sara.

It is because of you that I started this journey. Never, ever give up!

Most of all, to my husband Rick.

You are the best thing in my life.

You never doubted me even when I did.

You always tell me I can do anything if it makes me happy,

and

you believe that I can succeed more than I do myself.

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## **INTRODUCTION**

Over the course of the twentieth century and into the twenty-first century, the workforce in the United States has changed dramatically from farming, to industrial, to a technology based workforce (Murdoch, 2015). As the population ages and highly trained workers retire; and the need for science, technology, engineering and math (STEM) educated workers increases; there may be a shortfall of workers to meet the demand (Forbes, 2010). The STEM workforce impacts the nation's ability to compete on an international scale and provides a source of economic growth (Langdon, Beede, Khan, & Doms, 2017). To remain innovative and competitive on a global scale, the United States will need to increase the number of STEM field graduates by one million (President's Council of Advisors on Science and Technology; PCAST, 2012).

Preparing undergraduate students for careers in STEM fields continues to be a national priority. Yi and Larson (2015) reported, "As our society relies further on technology for economic development and prosperity, the vitality of the STEM workforce will continue to be a cause for concern" (p.11). The number of STEM related jobs is expected to increase 13% between 2012 and 2022 (Vilorio, 2014). In May of 2015, 6.2% of U.S. employment, (or 8.6 million jobs) was in a STEM-related field, with employment opportunities growing at twice the rate of non-STEM occupations (Fayer, Lacey, & Watson, 2017). This project analyzed the effects of virtual metacognitive academic coaching between graduate student coaches and undergraduate STEM majors with Executive Function disorders at a large, four-year university.

### **STEM Workforce**

Overall, the graduation rate from a 4-year college in the general population is 52 % while the rate for students with disabilities is 34 % (Newman, Wagner, Cameto, Knokey, & Shaver,

2011). The U.S. government noted graduation rates for STEM majors average only 40% nationally (PCAST, 2012). Women, minorities, and persons with disabilities are underrepresented in STEM fields, compared with the general population (Meadows, 2016; University of Washington, 2007,). Only 5% of students with disabilities enters a STEM field (Leddy, 2010). These individuals can provide valuable contributions to the STEM workforce (National Science Foundation, National Center for Science and Engineering Statistics, 2017). Enrollment of students with disabilities increased 19.5% for 2-year community colleges and 11.2% for 4-year colleges, between 1990 and 2005 (Newman, Wagner, Cameto, Knokey, & Shaver, 2010). According to the National Science Foundation Special Report on ‘Women, Minorities, and Persons with Disabilities in Science and Engineering,’ about one in four undergraduate students with disabilities will enroll in a STEM field (2017).

Students with specific learning disabilities comprise the largest subgroup of students with disabilities and many these students have deficiencies with Executive Function (Bellman, Burgstahler, & Hinke, 2015). Executive Function (EF) is a broad term used to define the ability to anticipate needs based on a goal, and to self-regulate mentally to perform the required tasks to meet that goal (Goldstein, Naglieri, Princiotta, & Otero, 2014). Attention -deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD) have been described as disorders of EF (Goldstein et. al., 2014; Barkley, 2014). Deficits in EF can lead to challenges with working memory, motivation, and problem solving (Antshel, Hier, & Barkley, 2014). The structure of postsecondary education provides many challenges for students with learning disabilities who are majoring in STEM fields, especially students with executive function disorders. All students face challenges in introductory STEM courses. In fact, one study suggested that students who

withdraw or fail an introductory course in their first year are more likely to leave the STEM major (Chen, 2013). One reason some students with disabilities are unable to complete introductory courses required for STEM majors could be due to their difficulty with executive function skills (Street, Koff, Fields, Kuehne, Handlin, & Getty, 2012).

To increase graduation rates in STEM fields, it is necessary for colleges and universities to develop strategies that will allow students to persist and succeed in introductory STEM coursework. Research has demonstrated academic coaching can improve success and persistence for students with learning disabilities who have executive function disorders, especially in their first year of college (Bellman et al, 2015; Bettinger & Baker, 2014; Field, Parker, Sawilowsky, & Rolands, 2013). Academic coaching is a one-to-one collaborative, proactive process that supports a change in behavior (Armatas, 2011; Bellman, Burgstahler, and Hinke, 2015). Richman, Rademacher, and Maitland (2014) found coaches can empower students by allowing them to choose a goal toward promoting self-discovery and by posing questions that allow students to reflect on the steps needed toward reaching that goal. Coaches can meet with students in person, or using mobile technologies such as smartphones or tablets. Coaches pose questions that allow students to reflect and thereby create a model for a metacognitive process for effective EF (Field, et al., 2013). Coaches guide students through a collaborative dialog, asking questions that are open-ended, to lead the students without directly providing the answer. This process allows students to practice effective EF strategies (Parker, et.al., 2011).

The Interdisciplinary Coaching As a Nexus for transforming how institutions support undergraduates in STEM (iCAN) Project is a framework for a dynamic model of supports that relies on team coaching using mobile technologies (e.g., tablets and smartphones) to help

undergraduates achieve executive function abilities that are critical to STEM success. The purpose of iCAN is two-fold: 1) to determine which aspects of the framework lead to enhance persistence in STEM majors and 2) to provide practicing special educators with tools and techniques to improve K-12 student's college and career readiness. This study explored the use of academic coaching in a four-year university. Graduate students, who are special education instructors, as part of their coursework, acted as coach for undergraduate STEM majors with EF disorders. The model for the project is illustrated in Figure 1.

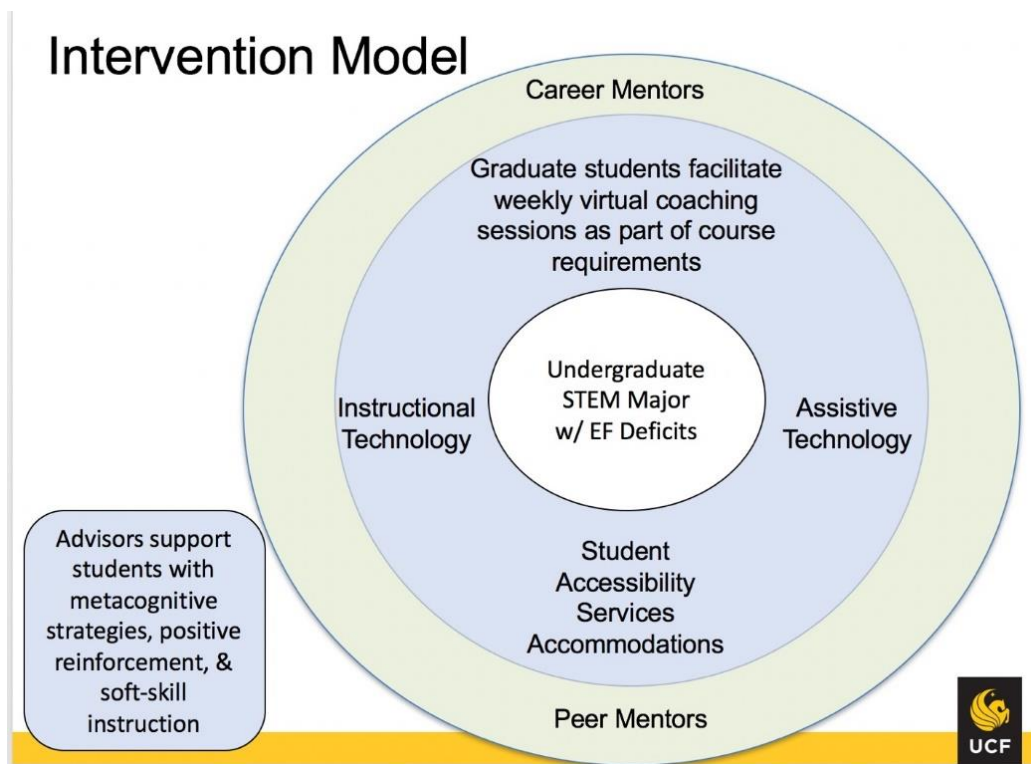


Figure 1 iCAN Conceptual Framework

## **Conceptual Framework**

Academic coaching has gained increased attention as a means to support students with executive function disorders (Parker & Boutelle, 2009). This project examines the effects of virtual metacognitive academic coaching between students with disabilities and practicing special education teachers who are graduate students at a large, four-year university. A mixed-methods design is used to evaluate both quantitative (i.e., grades and persistence) and qualitative (i.e. student surveys and interviews) outcomes for undergraduate STEM majors. The goal of this project is to develop iteratively a scalable framework to support students with disabilities that can be utilized in other universities and in K-12 contexts.

Coaches facilitate discussions whereby STEM undergraduate students develop goals, define measurable objectives, and create a plan of action to be successful in their introductory STEM classes. The skills coaches develop as a result of guiding undergraduates with EF disorders to college and career success may help them improve college and career readiness in their K-12 classrooms. Working with students with disabilities at the college level can provide the teachers with an idea of the challenges their current K-12 students could face. The National Governors Association and the Council of Chief State School Officers issued a set of national standards for English Language arts and mathematics called the Common Core State Standards. These standards are designed to be a benchmark of preparedness of K-12 students for college or the workforce (Kober & Rentme, 2011). However, these standards alone may not assess the preparedness of all students.

As Darling-Hammond, Wilhoit, and Pittenger (pg. 4, 2014) stated:

“The fuller array of deeper learning outcomes students need to acquire include the knowledge, skills, and dispositions needed to foster critical and creative thinking, problem solving, collaboration, multiple modes of communication, uses of new technologies, the capacity to learn to learn, and the social-emotional intelligence that fosters a growth mindset and supports resilience and resourcefulness.”

The Common Core State Standards (NGABP/CCSO, 2009) may exclude some students for a variety of reasons including those with learning disabilities (Smith, & Lowrey, 2017). A Universal Design for Learning (UDL) is a scientifically designed practice for providing flexibility in presentation of information; students ability to demonstrate knowledge; and includes high expectations for all students (Novak & Thibodeau, 2016). Understanding the process of providing UDL concepts may help students to engage in their metacognitive abilities to increase academic success (Grabinger, 2010). Although academic achievement is one important factor to develop college readiness; Gaertner and McClarty (2015) found that behavioral indicators such as self-management can also predict future college readiness. Providing teachers with tools for instruction on self-management and promoting social relationships may help to prepare students for college and career readiness (Darling-Hammond, et.al., 2014).

## **LITERATURE REVIEW**

This literature review will discuss what issues students with executive function disorders encounter related to STEM persistence. We will also review different supports that have demonstrated effective supports for students with executive function disorders such as Universal Design in learning, academic coaching and a growth mindset.

### **Students with Executive Function Disorders**

This study includes students with disabilities who exhibit executive function disorders. Executive function (EF) has been described as a complex cognitive process which allows a person to set goals, plan, organize, prioritize, and create a positive environment in which to succeed (Field, Parker, Sawilowsky, & Rolands, 2013). In addition, effective EF engages positive goal-oriented behavior and decision making (Suchy, 2009). Students with EF deficiencies may lack the necessary skills to organize, plan, or have the cognitive flexibility or working memory to be successful in STEM-related classes at the college level. Bellman, Burgstahler and Hinke (2015) noted young adults are still developing EF skills. Based on brain development, young adults entering college for the first time may still be developing higher order thinking related to EF (Otero, Barker, 2014). Those with disabilities are lagging behind in this development, furthering the challenges these students face in post-secondary institutions.

Many students with disabilities such as attention-deficit hyperactivity disorder (ADHD) or Autism Spectrum Disorder (ASD) can present with EF deficiencies. (Goldstein, et al., 2014). ADHD has been described as an EF disorder (Barkley, 2014). The Barkley Deficits in Executive Functioning Scale (BDEFS) demonstrated that ADHD has a large negative impact on EF.

(Barkley, 2014). This EF discontinuity is compounded for students with learning disabilities (Grieve, Webne-Behrman, Couillou, & Sieben-Schneider, 2014). Geurts, de Vries, and Van Den Bergh found that individuals with Autism Spectrum Disorder (ASD) benefit from EF instructional support, such as academic coaching, in their daily lives (2014).

### **STEM Persistence**

Studies indicate students with disabilities are less likely to be successful in college. (e.g., Bellman, et al., 2015; Richman, et al., 2014). According to the National Center for Education Statistics the overall graduation rate for first-time undergraduate students is around 60% (Ginder, Kelly-Reid, & Mann, 2016). Another study determined the graduation rate from a 4-year college in the general population is 52% while the rates for students with disabilities is 34% (Newman et. al., 2011)

The overall effect on successful persistence in a postsecondary setting can be due to a few common issues which initiate from deficits in higher order cognitive abilities related to EF (Grieve, et al., 2014). For example, many students may have been provided with supports at the high school level such as parental oversight, or classroom support, but those supports may disappear during college. The introduction of new socialization and time management challenges may place an additional burden on students with learning disabilities that could negatively impact their persistence in completing STEM-related coursework (Wei, Christiano, Blackorby, Shattuck, & Newman, 2014).

Programs designed to improve executive function can have positive impacts on students (Stamp, Banerjee, & Brown, 2014). Bettinger and Baker (2011) found students who participated in an academic coaching model persisted in their course work over a six-month time period and



the effects of coaching continued over the next 12 to 24 months. This study also found a statistically significant increase in graduation rates for those students who participated in academic coaching.

### **Universal Design for Learning**

To be successful in STEM coursework all student must have problem solving skills that can be enhanced through the use of positive self-talk. (Street, Duden, Koff, Fields, Kuehne, Handlin, Getty, & Parker, 2012). According to the National Center on Universal Design for Learning, an integral part of the UDL guidelines includes options for developing executive functions including self-talk. UDL can provide a framework for supporting not only students with EF but all students. The UDL framework includes scaffolding for executive function along with language function and explicit skills (Novak & Thigodeau, 2016). Providing instructors with tools to create positive learning environments and increase EF skills such as self-talk may provide benefits for all students through a UDL process. Academic coaching may provide tools, based on UDL principles, for instructors use to help students increase EF skills.

### **Academic Coaching**

Recent studies demonstrated that academic coaching for students with disabilities who have executive function deficits can improve student success (Bellman, et al, 2015; Field, 2013; Robinson & Gahagan, 2010). Academic coaching is a collaborative process between coach and student to design a program tailored to student needs. Academic coaching is not the same as academic advising or academic counseling. Academic advisors or academic counselors work under a separate paradigm than academic coaching. Academic advisors work with students on

course selection and counselors intervene with remediation after students fail to obtain success in the classroom (Bahr, 2008). Academic coaches can address areas of concern proactively, before academic advisors or academic counselors becomes necessary. Academic coaching is an individually based service that provides a means for students to practice and gain an increase in EF skills such as time management, positive self-talk, and organization (Parker, Hoffman, Sawilowsky, & Rolands, 2011).

Academic coaching has been defined as a “one-to-one interaction with a student focusing on strengths, goals, study skills, engagement, academic planning and performance” (Robinson & Gahagan, 2010, p. 27). Armatas (2011) describes coaching as a suggestive process that focuses on solutions. Coaches ask open-ended questions to facilitate student reflection on goals, achievements, struggles, habits and resources (Bellman, Burgstaler & Hinke, 2015). For example, a coach who realizes a student is struggling to find time to study may ask “How do you use your daily calendar?”

Armatas (2011) further describes coaching as a specialized form of communication which focuses on the coach’s ability to create suggestions to change behavior. The behavior change is implemented by the person being coached. Suggestions presented by the coach are developed in a collaborative manner between coach and student, and provide a supportive process for students to practice with and gain new effective strategies in managing their EF challenges (Mitchell, Gansemer-Topf, 2016).

The coaching model consists of coach and student working together to develop a plan that is individualized for the needs of the student based on dialog. Parker et.al. (2011) describe the use of questions by coach’s as a means “to model effective executive functioning and to elicit

students' own ideas as they increase their capacity to clarify, plan, and take action on goals" (p. 116). The collaborative discussion provides an example for students to participate in a model of effective EF processes (Bellman, Burgstahler, & Hinke, 2015). Rather than telling students what they need, the coaches use an inquiring questioning approach that asks the students questions to lead the student to design the answer to solve the problem (Parker & Boutelle, 2009). Bellman et al. (2015) also found that "academic coaching improved the study skills, self-confidence, and motivation of postsecondary STEM students with a variety of disabilities" (p. 107). Parker and Boutelle (2009) discussed how undergraduates' use of "self-talk" can improve motivation. Brinthaupt and dove (2012) describe self-talk as an inner speech that functions as a means for "the rehearsal of information, the internalization of rules, executive functioning, and self-guidance" (p. 326). Coaching also encourages students to view their challenges from different perspectives and to think with a positive perspective or growth mindset (Dweck, 2006). Amelink, Artis, and King (2015) noted a collaborative atmosphere often found in a coaching model can positively affect students' self-efficacy. High levels of self-efficacy, or the belief that a person can succeed, can greatly improve a student's overall success (Stelnicki, Nordstokke, & Saklofske, 2015). Students need to be aware of when they need help, where they are successful, and how to get the help they need (Stelnicki, et al, 2015).

Academic coaching can be limited by the lack of qualified coaches and funding resources (Bellman et al., 2015). The use of graduate students, who are also K-12 special education teachers, to act as coaches for students with disabilities as part of their course program, could provide a resource of qualified support coaches. This coaching experience could also allow the K-12 teachers to learn additional support strategies and gain experience using those strategies, to

take back to their K-12 classroom. These graduate students can practice various aspects of academic coaching, in a supportive environment, while helping students with disabilities persist in their STEM major. More information is needed to determine which aspects of academic coaching are most effective (Bettinger & Baker, 2011). Using a growth mindset is one aspect currently under investigation (Dweck, 2014).

### **Growth Mindset**

A growth mindset is described as the idea that every individual has the capacity to improve if one can maintain motivation and a positive attitude in the face of adversity or failure (Davis, 2017). Mistakes are opportunities to learn, not a failure that will stay forever. Studies have shown that students can learn, through experience, to raise their intellect and abilities to succeed (Laurian-Fitzgerald & Roman, 2016). Neuroscience has provided educators with evidence that the brain is malleable and learning can occur in areas once thought impossible (Aldrich, 2013).

The opposite of a growth mindset is a fixed-mindset. A fixed-mindset is the idea that you are born with a certain amount of intelligence and, no matter what, you are “fixed” at a certain level of accomplishment (Dweck, 2006). Students with a fixed mindset do not believe that they can achieve any more than what they have been born with. Both teachers and students can be in a fixed mindset. Teachers may influence the student’s mindset by ignoring effort and praising strong academic skills (Ricci, 2013).

The ability to learn and persevere can be taught. Laurian-Fitzgerald et. al. (2016) posited they could teach growth mindset skills in a small study of first graders, and that this can and should be applied to students of all ages. Ricci (2013) described cognitive abilities as varied

based on a person’s experiences. If a student is not provided with experiences in the learning process (i.e., the metacognition necessary to learn and transfer new information), she/he cannot be expected to know how to learn. Figure 2 compares different beliefs from a growth mindset and a fixed mindset point of view.

Students who struggle with EF may have a fixed mindset and may not have the motivation to succeed, especially in a STEM major. A growth-mindset provides these students with the idea that with effort they can succeed. Dweck’s research (2006) showed that students who believed they could do better, did do better. Educating teachers on the process of promoting a growth mindset for students with EF disorders may help students when confronted with a challenging situation that may occur because of the student’s EF disorders. These students can come to understand that even though they face challenges, with a positive growth mindset, acquired through academic coaching, they can persevere.



Figure 2 Growth mindset model

## **PURPOSE OF STUDY**

Individuals with disabilities can make positive contributions to the STEM workforce (NSF, 2013). However, to be prepared to enter the STEM workforce they need to receive appropriate encouragement, coaching, and EF strategy instruction. Special education teachers often lack the knowledge and skills to prepare their students with disabilities for STEM careers (Basham & Marino, 2013). Academic achievement is one factor leading to college readiness but behavioral indicators such as self-management and social engagement with teachers and peers also serve as independent variables affecting future college-readiness.

Interdisciplinary Coaching As a Nexus for transforming how institutions support undergraduates in STEM (iCAN) is a research and development project designed to provide a hybrid model of supports to college students with disabilities.

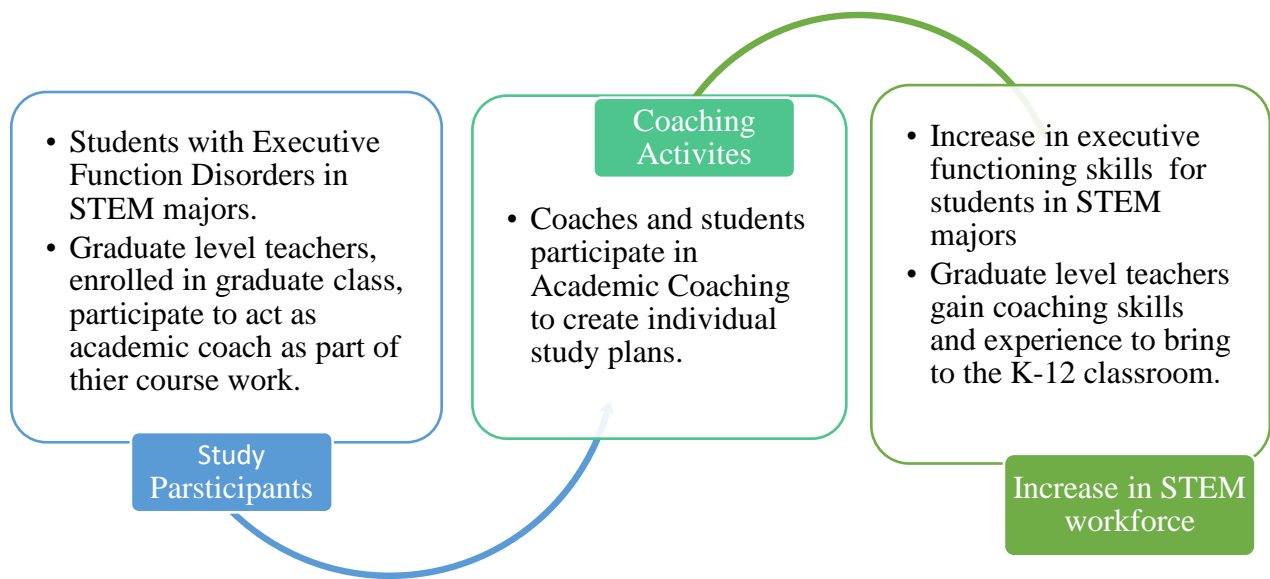
The primary research questions for this study are:

1. What strategies can K-12 teachers in a master's level course use to coach post-secondary students with disabilities to persist in STEM coursework?
2. Are teachers in the study able to learn and practice coaching strategies and skills they may use in their K-12 classroom?

Through the process of coaching during their coursework, the graduate student-coaches can reflect on strategies that helped provide support to the STEM majors. The strategies that allow students to persist in their introductory STEM classes can be used by the coaches as a model for support in their K-12 classrooms. The master's level teachers acting as coaches

practiced using academic coaching skills to support the students with disabilities. It is hypothesized that both undergraduate STEM majors and graduate students who are practicing special education teachers will benefit from the weekly coaching sessions. The overall coaching model is depicted in Figure 3.

Figure 3 Coaching Model



## **METHODOLOGY**

To evaluate different strategies to support students with executive function disorders this study looks at an academic coaching model. This model includes graduate students acting as academic coaches and undergraduate STEM majors with executive functioning disabilities. The undergraduate students complete different surveys to discern areas that can be supported through coaching by the graduate level coaches.

### **Participants**

#### Graduate Students

In this study, the graduate students are all in-service special education teachers. Graduate students (N = 26) enrolled in the University of Central Florida voluntarily chose to participate as academic coaches as part of their secondary methods coursework as seen in Figure 4. The course mode is online and the graduate students may be geographically located away from the college campus.



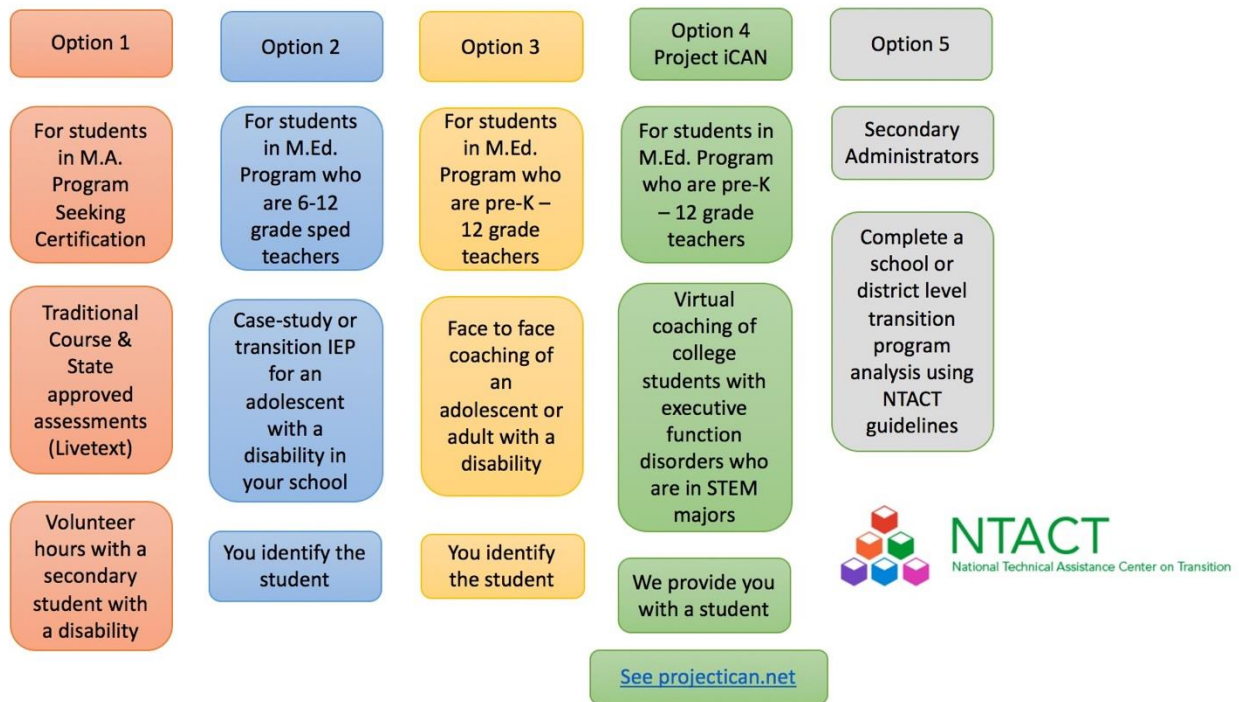


Figure 4 Graduate student options in the secondary methods course.

### Undergraduate students with disabilities

Starting in December of 2016, college students with disabilities were recruited through the Office of Student Accessibility Services at the University of Central Florida. Students participated in a Qualtrics survey to determine eligibility to participate. (Appendix A)

Students who agreed to participate provided informed consent. After eligibility was established and the consent form was signed, students and coaches were randomly paired. Each coach was provided with the contact information for his or her student. The graduate students, acting as coaches, (hereafter referred to as coach,) worked with individual undergraduate students with disabilities, (hereafter referred to as student,). Students and coaches met on a

weekly basis, virtually, to collaborate on an individualized plan to enhance EF skills. The initial study participants include 26 coaches that were randomly paired with 26 students.

## **Instruments**

There were two surveys students completed at the beginning of the semester to determine individual areas of weakness based on executive function. Students were sent two different emails with a link to complete each survey.

### **Measurements of Executive Function**

Students completed the Barkley Deficits in Executive Functioning Scale (BDEFS) to provide baseline EF information and inform student/coach goalsetting (Allee-Smith, Winters, Drake, & Joslin, 2013). The survey was developed by Robert Barkley in 2011. It is based on five constructs of EF dysfunction (i.e., self-management, self-organization, self-restraint, self-motivation, self-regulation) and their effect on daily life (Barkley, 2013). The BDEFS provides a 70-item questionnaire that includes a Likert rating scale for each item and takes about 15-20 minutes to complete. Scoring is based on the age of the participant and the ratings for each item by construct (e.g., self-management). The scores for each section are then added to create a Total EF Summary Score. The scores for each section are compared with a BDEFS-LF Score Sheet and compared to scores of a general population (Barkley, 2011). Reported reliability (Cronbach's alpha) ranged from .75 to .98 for factor scores and from .68 to .99 for summary scores (Barkley, 2013). The form served as a guide for coaches to identify areas of discussion that the coach and student could focus on during the coaching sessions and was not designed to be a diagnostic tool.

The SuccessNavigator™ is a second assessment produced by Educational Testing Services (ETS) (Markle, Olivera-Aguilar, Jackson, Noeth, & Robbins, 2013). The *Success Navigator* is a standardized online assessment of social factors critical for STEM persistence including: personality, motivation, study skills, intrapersonal and interpersonal, skills. Reported reliability (Cronbach's alpha) ranged from .78 to .90 across the skill scales. This assessment is designed to identify a student's strengths and weakness as related to persistence in college. The format for the assessment also includes feedback for administrators, counselors or coaches to utilize when working with students. The assessment evaluates four general areas that include academic skills, commitment, self-management, and social supports (Markle, et.al. 2013).

The online assessment takes approximately 30 minutes to complete. After the student completes the assessment the coach can easily access a report, which includes a color-coded bar to quickly evaluate strong and weak skill levels. The program then provides the coach with a report that includes areas of strength and areas of weakness along with suggestions to provide to the student to improve a specific area of weakness. For example, the report describes a student's low skill level in a particular area, then provides suggestions and links for strategies that the student can use to help her/him remediate or compensate for the weakness.

Using both the BDEFS and the SuccessNavigator™ reports, coaches can collaborate with students to design an action plan. The support the students receive based on their assessments could help allow them to be successful in their pursuit of a STEM major.

## **Procedure**

### STEM Students

Undergraduate STEM majors were recruited through the University of Central Florida's Student Accessibility Services Office. Each student completed a screening survey to determine eligibility to participate in this study. To participate students had to be registered with the university's Student Accessibility Services Office; enrolled in STEM course; and working toward a STEM major. Students were recruited at the beginning of the Spring, 2017 semester. Students self-reported information concerning their disability. Each student was interviewed by phone and provided with information about the study. They were informed that their participation was completely voluntary; they could leave the study at any time; and they should only participate if they wanted to. To participate, students needed to sign an electronic consent form.

### Coaches

As part of the one semester master's level course, coaches could choose to participate in the study or complete one of four other options. All course options are listed in Figure 3. All options included introductory modules discussing transition planning for students entering college and the workforce, Universal Design for Learning, effective instructional practices and individual learning plans. Coaches that agreed to participate in the study completed the Collaborative Institutional Training Initiative (CITI) training prior to participating in the study. The modules for the study option also included instructions on the Adobe Connect online communication platform, instructions for analyzing SuccessNavigator™ and Barkley EF tests, and the constructs of academic coaching as related to EF deficiencies. After the coaches became

familiar with the instruments for the study they completed modules on academic coaching and metacognitive instruction strategies. The objectives of the module included gaining knowledge about the students, evaluating the student responses for meaningful strategies, and apply that knowledge to the case studies. Coaches were provided with resources that included information for inquiry questioning, reflective listening, positive self-talk, and growth mindset vs. fixed mindset.

The goals for the coaches as they worked with students were to provide strategy instruction; identify content specific resources; backwards map strategies from coaching sessions; and develop individual learning plans for their students. The coaches are introduced to a coaching model based on inquiry and reflection rather than traditional study strategies or tutoring (Parker et.al. 2011). Coaching is a collaborative process between coach and student (Weiss, & Rohland, 2015). Coaching strategies include topics such as non-directive questioning and guided questioning. Non-directive and guided questioning is a strategy that includes coaches engaging the students to participate in reflective thinking, to guide students to set their own goals (Parker & Boutelle, 2009). Using a growth mindset and positive self-talk are also strategies provided for the coaches to use to support students.

The coaches initially contacted students by phone or email to set up meetings through the Adobe Connect meeting platform. Adobe Connect provides an online meeting platform and includes video conferencing as well as the ability to share information such as power point presentations or screen sharing. Using online communication allowed coaches and students to meet without needing to be physically in the same location. The master's level course the coaches were enrolled in was a distance learning course. Coaches were not always

geographically near the college campus to participate in the course or to act as a coach. The online communication platform allowed coaches and students to communicate despite their physical location.

During the initial meeting, coaches first establish a connection with students by asking open ended questions about their major, their specific coursework for the term, and confirming students completed the initial Success Navigator and Barkley surveys of Executive Function. The coach and student discussed what specific areas the students would like to focus on.

Once the Executive Function surveys were completed, the coaches reviewed the results with students. The coaches and students discussed the areas of strengths and weaknesses. The coach and student decided on short and long-term goals for the semester. Using resources and tools obtained from the master coursework, the coaches provided students with metacognitive strategies and assistive/instructional technology to use in order to address a specific goal before the next meeting. At each meeting, students and coaches reviewed the goals and evaluated the tools provided. Goals can then be readdressed with new strategies, or new goals can be set.

Coaches and students worked together to create a plan of action for the semester. Students were held accountable to the coaches for implementation and measuring the effectiveness of the plan on a weekly basis. Technology, such as texting or phone calls, also allowed for quick “check-ins” during non-meeting times and to add reminders or support as needed (Parker, et al, 2011). Coaches and students meet a minimum of 9 times during the semester. Each meeting was recorded using the adobe connect conference platform. Meeting recordings ensure implementation fidelity related to the coaching strategies. All coaches provided a final summary of their interaction with their student as a part of their coursework.

Coaches provided a reflection of their coaching experience, how they rated their effectiveness in supporting the student; what they learned about coaching students; and a summary of how their learning could be applied to K-12 contexts.

The coaches conducted an exit interview with students that included asking if the students succeeded in using the tools provided to them; were the students successful in implementing those tools; did the students persist in their coursework for the semester; did they find the coaching method helpful; will they continue to use the coaching strategies; and would they like to continue receiving coaching services in future semester. The summaries were analyzed to determine: 1) Which strategies the K-12 teachers used to coach post-secondary students with disabilities to persist in STEM? And 2) Will these teachers transfer the coaching strategies to their K-12 students?

## **RESULTS**

In-service teachers numbering 26 who were also from the exceptional education master's program chose to work as coaches for undergraduate students with disabilities majoring in a STEM field. The coaches currently employed as teachers or support personnel in a K-12 school numbered 24. The two non-employed student-coaches were currently participating full-time in their master's program.

### **Student Experiences**

A total of 38 students met the initial study inclusionary criteria. Of the 38 students who qualified initially, 27 signed the consent form. Table 1 includes the reported STEM major and the STEM coursework enrollment during the study semester. Student participants in similar majors or courses were not enrolled in the same individual course. Starting in week three of the semester coaches and students were assigned randomly to each other. Coaches continued their coursework and students were sent instructions to complete both the SuccessNavigator™ and Barkley Survey. Both surveys were completed online. Coaches were instructed to contact their student initially by email to determine a schedule of meeting times and formats. During the next two weeks, two students decided to withdraw from the study. The coaches were reassigned or elected to complete a different track for their coursework.



Table 1. Undergraduate Majors and Associated STEM Course Enrollment.

<b>Anticipated Major</b>	<b>Number of participants</b>	<b>Associated STEM Courses</b>
Aerospace Engineering	1	Statistics
Biology	3	Biochemistry, Organic Chemistry I, Organic Chemistry II plus Lab
Biomed/Health Science	3	Chemistry I, Pre-calculus, Trigonometry, Organic Chemistry II
Computer Science/Engineering	4	Introduction to Computer Programming, Logic I, Critical Thinking, Algebra I, Digital Systems, Differential Equations
Engineering (Industrial, mechanical, civil, environmental)	8	Linear and Abstract Algebra, Chemistry 1A, Algebra, Introduction to Engineering, Dynamics, Properties of structures of Materials, Human Ergonomics, Calculus II, Statistics, Quality Engineering, Thermal Dynamics, Introduction to programming, Principles of Chemistry, Environmental Geo Science, Physics II, Probability and Statistics
Mathematics/Statistics	2	Calculus I, Abstract Algebra
Psychology	3	Research Methods, Neurobiology, Microeconomics, Behavior

Coaching sessions began approximately four to five weeks into the semester. The first meetings between coaches and students consisted of contact by phone or email to schedule a specific meeting time to discuss the process and get to know each other. Since some coaches worked full time they had difficulty finding a convenient meeting time for both coach and student. Other interferences for scheduled meetings included family emergencies, health issues, schedule differences and a hurricane. During the initial period, some coaches were not able to

contact their student at all. The student would not return phone calls or respond to emails. The coach was then reassigned to another student if possible. The final number of students and coaches participating and completing the study was 19. Table 2 displays the disabilities reported by the students. Some students reported more than one disability.

Table 2. STEM Students Self-Reported Disabilities

Disability	Number of Participants
ADD/ADHD	9
Anxiety	4
Depression	2
Dyslexia	2
Non-Specified Learning Disability	3
Processing/Memory Disorder	6
TBI/PTSD	2

Each coach arranged to meet with the student during the next four to seven weeks. This was a period of adjustment. A few coaches dropped their course and students also left the study. Students that left did not always report to the coaches that they wished not to participate any longer. The students simply did not return phone calls or messages. There were a variety of reasons for both coaches and students to drop from the study which included: not enough time to participate, scheduling conflicts. One student decided to participate in the next semester because they did not “get along” with their coach. That coach eventually also left the study.

During the initial meetings coaches confirmed students completed the required surveys. Coaches reviewed the survey’s results with the students. Every student had an area indicated as needing improvement with either the SuccessNavigator™ or the Barkley. The following table

describes the principal areas of EF weaknesses identified by the coaches. The Barkley survey did not include questions pertaining to social support, commitment, sensitivity to stress, or self-efficacy.

Table 3. Executive Function Measured Weaknesses

	<b>Number of Students identified as weak in these areas by SuccessNavigator™</b>	<b>Number of Students identified as weak in these areas by Barkley Assessment</b>
<b>Self-Management</b>	13	9
<b>Self-Motivation</b>	1	6
<b>Self-Organization</b>	2	5
<b>Problem Solving</b>	1	1
<b>Self-Restraint/Regulation</b>	1	10
<b>Social Support</b>	5	
<b>Commitment</b>	6	
<b>Sensitivity to stress</b>	5	
<b>Self-Efficacy</b>	3	

Coaches reported asking open-ended questions to establish a relationship with their student and explore what areas of concern the students had related to their course success. Examples of initial open-ended questions could include “Tell me about your courses?” “What is your most difficult course to manage this semester?” or “What does your social life include?” Coaches discussed the students course work, barriers to success, areas of concern for the students, and /or questions about study participation. Some students disagreed with the results of the surveys, but after further discussion with the coaches, did express a need to

improve in those areas. As part of the collaboration process, coaches and students agreed on the specific areas to concentrate on during the coaching sessions. The coaches could guide the students to accept the indications of the survey results, or focus on a specific area the student felt was more important. At the end of the study twenty-one coaches provided reflections and reports based on their coaching experience. Table 3 includes the domains that were identified by coaches and students as areas of concern. Since each coach utilized the executive function survey information based on the individuality of the student, the information included in Table 3 includes only those executive function survey results expressed in the coaches' reports.

Students were required to participate in an exit survey at the end of the semester. Students were asked

1. "What about the coaching experience was most beneficial for you?"
2. "What could be improved?"
3. "Do you plan to persist in the STEM major?"
4. "Why or why not?"
5. "Would you be willing to participate in this study in the spring?"

Coaches reported the results of the final reflection survey or students were called after their final meeting with the coaches. Only those students who directly responded to the questions are included in the results listed in Table 4. One student decided to change majors to human resources at the end of the semester. One student dropped their classes because of stress and low performance before the end of the semester. According to the coaches, all other students succeeded in completing and passing their course work for the semester. All students viewed the coaching experience in a positive manner. Each student found at least one skill or tool that they

will continue to implement in their daily lives. All but four students expressed an interest in participating in the coaching model in the future. These results demonstrate a positive outcome for the coaching model to increase STEM persistence for students with executive function disabilities.

Table 4. Coaches reflection and student overall perception of coaching.

<b>Coach/ Student</b>	<b>Coaching Strategies Implemented</b>	<b>Student Reflection of STEM Persistence</b>
1C	Active listening, non-directive questioning, positive reinforcement, providing feedback. Provided Cornell Notes instruction, power point about positive self-talk, Used the Sensitivity to stress advisor action plan. Used strategies from test anxiety student action plans.	Positive
2C	Non-directive questioning, positive reinforcement, growth mindset. Close reading steps.	Positive
3C	No specific strategy provided	Positive
4C	Non-directive questioning, growth mindset, reflective thinking and positive reinforcement. Asked questions and transferred responsibility to student, gave positive reinforcement. Active listening, wait time, rephrasing and reflective comments.	Positive
5C	No specific strategy provided	Positive
6C	Active listening, open ended questions, positive reinforcement,	Positive
7C	Non-directive questioning, growth mindset, Gave student more positive opinion of herself. Active listening and goal setting were most useful.	Will change career to Human Resources
8C	Self-monitoring productivity to help with self-management goals	Positive
9C	No specific strategy provided	Positive
10C	No specific strategy provided	Positive
11C	Non-directive questioning, paraphrasing, clarifying, pausing and using silence, and meditational questioning to guide student through the process of personal reflection. Student identified using positive self-talk and focusing on the present as two strategies that she would like to try	Positive
12C	Positive self-talk, guided questioning	Positive

<b>Coach/ Student</b>	<b>Coaching Strategies Implemented</b>	<b>Student Reflection of STEM Persistence</b>
13C	Guided questioning, positive self-talk, open-ended questions, active listening growth mind-set	Positive
14C	Active listening, guided questioning,	Positive
15C	Non-directive questioning, positive self-talk, active listening	Positive
16C	Connection, goal setting, reflection, growth mindset, positive reinforce, active listening, time management and non-judgmental conversation.	Positive
17C	Inquiry Model- elicit students' own ideas as to help increase her ability to clarify, plan and act on her short-term goal of keeping on her school schedule. This approach has helped for she has commented several times, "now that I'm thinking about that".	Positive
18C	Included positive reinforcement, collaboration, and mediational questions. Active listening The SLOPE article states that mediational questions help analyze what worked and didn't work.	Negative-Student dropped courses. Student will try next semester.
19C	Positive thoughts, encouragement,	Positive

## Coaching Experiences

The graduate level students acting as coaches self-reported their experiences on their use of academic coaching strategies. As part of their coursework coaches were required to create a case study and include a reflection of their experiences. Each coach was provided with a template for preparing the case study. The template required coaches to create a case study that included information they gained regarding the undergraduate student during the initial coaching sessions, goals discussed during coaching sessions, and results of the instruments used in the study. Coaches also provided specific strategies introduced to the student, evidence that the strategies were effective, and the aspects of the coaching experience that they felt they could use in their K-12 classrooms most effectively.

Coaches noted the experience as being personally beneficial. One coach expressed that they also needed the same tools that the coach was providing to their student, such as better time management or positive self-talk in their own graduate level coursework. Another coach expressed using the growth mindset with their teenage children. Coaches also expressed positive outcomes with the students they were assigned. Each coach provided positive feedback on the experience of coaching, no matter the outcome of the student. One coach reported that “As an elementary educator, I find most of us only consider the present stage of education while teaching students.” Other themes repeated by coaches included the ability to be a more reflective listener, the importance of building a relationship with the student, providing a positive outlook, and creating a growth mindset that included looking at mistakes as an opportunity for learning. Another coach expressed that she now understood the “experience of what current students will experience in the future” and that was beneficial to guide and instruct students in the present.

The experience also gave coaches the perspective that support for students may be needed, even when students are successful in the classroom. Students can exhibit a deficit in areas of time management or social interaction skill, yet have passing grades. These students may be suffering or experiencing high levels of anxiety or stress due to their deficits. This may not affect the students current academic work, but it may in the future. Many coaches expressed that their students were passing their classes but experiencing high levels of stress and anxiety. Through guided questioning the coaches could provide strategies for reducing test anxiety or reflect on the causes of stress such as improper time management. Discussing this helped the students to discover methods to reduce their overall stress or anxiety. The coaches also

expressed that this can be applied to their K-12 classroom. Reducing stress with their current K-12 students would be helpful in creating a positive learning environment.

Coaches provided the following strategies as constructive actions students could take to be successful in their coursework:

- A written planner as well as smart phone calendars with reminders and alarms
- instruction on color-coding each course to quickly assess what needed to be done for each course.
- Self-monitoring productivity exercises
- Positive talk power point presentation
- Reviewing to-do list each evening
- Apps to monitor sleeping
- Apps to reduce stress

Other examples of a SuccessNavigator™ goal setting tools can be found in Appendix C.

The research questions for this study were:

1. What strategies can K-12 teachers in a master's level course use to coach post-secondary students with disabilities to persist in STEM majors?
2. Are teachers in the study able to transfer knowledge and skills learned during the coaching sessions to their K-12 students?

Table 5 summarizes the results based on the reflections and student surveys provided from the coaches. Based on the reflections of the coaches, this experience provided them with a unique perspective of what a college students with EF disorders face in a college setting. The coaches researched different strategies that they could provide to their students based on the



information provided by the different surveys available. They also practiced using a growth mindset with their students such as reflective listening and positive self-talk. They realized that the EF skills needed to be successful in college can be taught in their K-12 classrooms. Most coaches noted that teaching these skills in addition to teaching academics can help their students succeed for their current level of education and to prepare them for college readiness.

Table 5. Summary of results based on research questions

<p>Research question 1:</p> <p>What strategies can K-12 teachers in a master’s level course use to coach post-secondary students with disabilities to persist in STEM majors?</p>	<ul style="list-style-type: none"> <li>• Strategies</li> <li>• Active/Reflective listening</li> <li>• Non-directive/open-ended questioning</li> <li>• Growth mindset</li> <li>• Goal setting</li> </ul>
<p>Research question 2:</p> <p>Are teachers in the study able to transfer knowledge and skills learned during the coaching sessions to their K-12 students?</p>	<ul style="list-style-type: none"> <li>• Themes from coaches:</li> <li>• Teaching includes life skills</li> <li>• Importance of relationship building</li> <li>• Personal benefit from strategies</li> <li>• Practiced coaching strategies.</li> <li>• Practiced growth mindset.</li> <li>• Gained unique perspective for their current student’s future.</li> <li>• Discovered EF skill can be taught.</li> </ul>

**Limitations:**

Some students or coaches lacked the technology, such as a web cam or access to quality internet or Wi-Fi needed to provide a quality face-to face session. In this instance, coaches could adjust and communicate through telephone. There were no reports of using smartphone platforms such as Facetime, although that may be a suggestion for future studies. This study

looked at only one semester with a small sample size to determine the effects of coaching on persistence of students with executive function disabilities in STEM majors. More research is needed to determine if the effects of coaching can be successful in supporting STEM majors with disabilities and K-12 students for college and career readiness.

The attrition level for this study was higher than anticipated. There was a 20% attrition level anticipated, but the actual attrition level was 28%. This could be due to the disruptions that occurred during the semester including a hurricane that forced both coaches and students to be without internet access for an extended period. Scheduling conflicts and lack of time were reported as reasons to leave the study.

## DISCUSSION

This study looked at a model that included graduate level students, acting as coaches, providing academic coaching to college level students in a STEM major with disabilities. The coaches reported positive gains in their ability to use coaching skills with their students in a K-12 classroom. There were a few main themes that were reported by the coaches. Understanding what college level students encounter in their course work and personal lives gave the coaches a perspective of what challenges their current K-12 students may face in the future. Coaches reported that they felt it was necessary to provide skills for the K-12 students that are not just academic to prepare their students for the future. For example, one coach reported the “importance of teaching more than academics”. Using coaching strategies to improve EF has been shown to improve academic success (Bellman et al., 2015). The general theme reported by the coaches for understanding what their current students will face in the future demonstrated the importance to provide EF strategies along with academics. Future research can study the impact of these strategies and the effect on students’ college and career readiness.

Coaches appreciated learning to use positive self-talk and other strategies in their own life. The ability to use positive self-talk and problem solving skills can be part of a UDL framework to help all students succeed in STEM coursework (Street, et.al., 2016). One coach reported that they “found helping student helped the coach with the same challenges, especially positive self-talk, growth mindset, chunking assignments.” Coaches expressed the experience of helping students allowed them to also have a positive growth mindset. The impact of teachers having a positive growth mindset may also be an area of future research.

The primary source of communication between coach and student for meetings was an Adobe Connect meeting room. Adobe Connect allows meetings to take place over a variety of devices including tablets, smart phones and laptop computers without the need of a download and includes video and sound. The ability to meet online eliminates a possible barrier for students and coaches to connect. Having the ability to use video provides a personal “face-to-face” connection. Some coaches and students reported issues using this platform when using a desktop without a webcam. In some instances, the quality of the connection was poor. This may have been due to insufficient internet or Wi-Fi connections. In these cases, the meetings were conducted using a smartphone. There are many different meeting platforms available that utilize remote meetings for those who are unable to meet in person. Coaches and students were able to work with whatever technology they had available. Recordings could only be made with meetings in the adobe platform. If recordings were not made coaches provided a summary of the meeting. Coaches did report texting and emailing students to provide reminders for meetings or to check in with the students. These connections between meetings were very effective in keeping students accountable and establishing a relationship.

Student self-reported their experiences through exit interviews. Details such as grades, GPA’s and other academic indicators were not collected. Such factors as medication or other supports provided from the Student Accessibility Center or any outside sources such as medical or psychological treatments were not evaluated in this study. The students only reported on their success in coursework during the semester. Final grades were not evaluated for this study.

All students who participated in the exit interviews provided at least one strategy they found helpful through the coaching process. One consistent theme that emerged was the

strategies provided from the coaches for time management. Although many students agreed that learning time management skills was a positive aspect of coaching, the types of time management strategies provided by the coaches was individualized for the student. For example, one student who stated time management as a benefit to coaching was given instruction on using a written planner, while another student was given instruction on color-coding assignments to manage study time, while another was provided with apps to set reminders for scheduling study times. Although each strategy is related to time management, the coaches were able to individualize the strategy to the student's needs and preferences. This is an example of the need for further studies on the benefits of individualized support.

Students also reported having an increase in motivation because they knew they would be held accountable to report their progress to their coach. There were no consequences for not completing a task discussed with the coach, positive or negative. Yet, knowing the coach would ask increased the student's motivation to utilize the strategies. The students enjoyed having someone to talk to who was not a teacher, friend or parent. One student reported they liked having a non-judgmental person to discuss things with and another liked exploring new ideas and ways of thinking. It should be noted that not all students who participated in coaching also participated in the exit interviews.

This study looked only at those students who completed the coaching sessions. Students who volunteered and completed initial screenings and surveys, but later withdrew were not included in the final evaluations. The study did not compare students with a similar cohort that did not receive coaching services. More research is necessary to determine the effectiveness of coaching services to include quantitative and controlled data. Further studies are also needed to

determine the level of coaching services the graduate students bring back to their K-12 classrooms and the effect of these services to support their students for college and career readiness.

### **Future Research**

According to a recent study, a significant percentage of students who have learning disabilities enroll in community college (Wei, et al, 2014). As stated previously, many of these students will also have EF disorders. Since community colleges can provide a much-needed resource for STEM graduates, it is imperative to include and compare the effectiveness of coaching models for these students (Amelink et al., 2015). The transfer to a four-year university may have unique challenges for these students. Studies suggest that students who participate in advising sessions are more likely to persist to a four-year program. (Bahr, 2008; Packard & Jeffers, 2013). Future research is needed to determine if academic coaching can support students in a community college or as transfer students to a four-year university.

Although most coaches and students reported a positive outcome from the experience, further research is necessary to determine the overall and long-term effects related to persistence and the ability of the coaches to use the learned coaching techniques in their K-12 classrooms. The students self-reported their success in their course work. An area of future research could look at the increase in GPA for students who participate in coaching compared to those who did not. Future studies could include comparison of transcripts to determine success in STEM coursework. Graduation rates could also be evaluated over a longer study period.

Supporting STEM students with learning disabilities can provide supports that all students can benefit from. Skills of EF are still developing in young adults up to age 25 (Parker

& Boutelle, 2009). Creating supports and strategies designed to help students with disabilities who have executive function disorders can create a model of support for all students who are developing executive function skills and need a universal design for learning.

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## **APPENDIX A**

### **QUALTRICS ELIGIBILITY SURVEY**

1. Are you registered with the Student Accessibility Services office or Disability Support Services at your institution?
  - Yes
  - No
2. Are you currently receiving disability services at your institution?
  - Yes
  - No
3. Which institution are you enrolled in?
  - Seminole State College
  - University of Central Florida
4. Would you prefer face to face meetings or online meetings? Please keep in mind face to face meetings cannot be ensured?
  - I prefer face to face meetings
  - I prefer online meetings
5. Are you currently enrolled in an introductory Science, Technology, Engineering, and Math (STEM) course?
  - Yes
  - No
6. Are you in a Science, Technology, Engineering, and Math (STEM) major?
  - Yes
  - No



7. Thank you for your responses. You may be eligible to participate in this study. Please provide your contact information below.

You will be contacted shortly to review your eligibility.

Name

Email Address

Phone

8. Thank you for your responses. At this time, you will not be eligible for this study. Please include your contact information if you would like to be included in our database for future studies.

## **APPENDIX B**

EXAMPLES OF SUCCESSNAVIGATOR™ GOAL WORKSHEETS

### Friends and Family Goal

First, write down a SMART goal. In the boxes below, unpack your goal. Write down three things you can think of that you have to do to complete this goal.

Personal Goal.

**SMART friends and family goal:**  
Work On Communication Skills

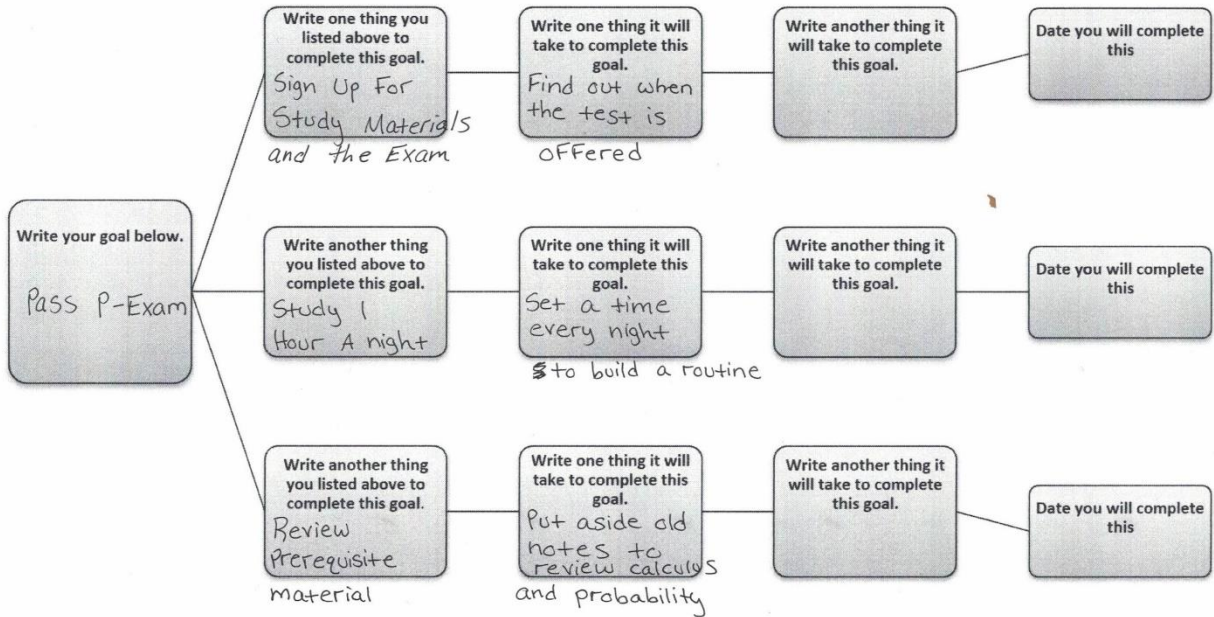
One thing I have to do to complete this goal:  
Go to Toast Masters

One thing I have to do to complete this goal:  
Run for office in Fraternity or Actuarial Science Club

One thing I have to do to complete this goal:  
Exercise On Regular Basis

School Goal





Now write down your goal for the next year in the far left box and the three things you wrote in the boxes next to it. Next fill in the boxes to indicate how you will complete each of these things. Finally, write down the date by which you will complete this task.












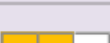
## **APPENDIX C**

EXAMPLES OF SUCCESSNAVIGATOR™ STUDENT SCORE REPORTS WITH TOOLS

YOUR SKILL PROFILE

Academic Skills– Tools and strategies to succeed in the classroom		
<b>Your skills are similar to students who:</b>	<ul style="list-style-type: none"> <li>Effectively use strategies to manage time and assignments</li> <li>Always attend class and are prepared</li> </ul>	
<b>Tools/Tips</b>	The Tutoring Center can provide strategies to help you set goals and organize your time. See your Advisor for more information, or click <a href="#">here</a> for helpful tips and tools.	<b>HIGH</b>
Commitment– Active pursuit toward an academic goal		
<b>Your skills are similar to students who:</b>	<ul style="list-style-type: none"> <li>See little value in a college degree</li> <li>Do not feel attached to the college</li> </ul>	
<b>Tools/Tips</b>	The Career Center can provide strategies to help you set goals and plan your academic career. See your Advisor for more information, or click <a href="#">here</a> for helpful tips and tools.	<b>LOW</b>
Self-Management– Reactions to academic and other stressors		
<b>Your skills are similar to students who:</b>	<ul style="list-style-type: none"> <li>Have difficulty managing stress in a positive, productive manner</li> <li>Doubt their skills and abilities</li> </ul>	
<b>Tools/Tips</b>	The Counseling Center can help you manage stress that arises from college life. See your Advisor for more information, or click <a href="#">here</a> for helpful tips and tools.	<b>LOW</b>
Social Support– Connecting with people and resources for student success		
<b>Your skills are similar to students who:</b>	<ul style="list-style-type: none"> <li>Hold some connections to people and resources</li> <li>Have occasional difficulty balancing the demands of college and personal life</li> </ul>	
<b>Tools/Tips</b>	The Office of Student Life can connect you with important student groups on campus. See your Advisor for more information, or click <a href="#">here</a> for helpful tips and tools.	<b>MODERATE</b>

**DETAILED SKILL PROFILE**

			<b>Students with Similar Skills:</b>	<b>Next Steps</b>	<b>Skill Level</b>
Academic Skills	<b>Meeting Class Expectations</b>	Doing what's expected to meet the requirements of your course including assignments and in-class behavior	Show up to class, complete assignments, and finish work in a timely manner	<ul style="list-style-type: none"> <li>Consider using your strengths to help struggling classmates.</li> <li>Take care of yourself to avoid feeling overwhelmed.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 HIGH
	<b>Organization</b>	Strategies for organizing work and time	Regularly use and update a planner, create and complete tasks on to-do lists, and stick to a schedule	<ul style="list-style-type: none"> <li>Use your strengths to take on leadership positions.</li> <li>Continue to use organizational tools to stay on top of assignments.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 HIGH
Commitment	<b>Commitment to College Goals</b>	Perceived value and determination to succeed and complete college	May find it difficult to consistently set and work toward academic goals and find limited value in a college degree	<ul style="list-style-type: none"> <li>Work on defining educational and career goals.</li> <li>Engage in goal-directed behavior.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 MODERATE
	<b>Institutional Commitment</b>	Attachment to and positive evaluations of the school	Feel little attachment or loyalty to their school	<ul style="list-style-type: none"> <li>Try to uncover the reason you feel disconnected.</li> <li>Assess your knowledge of campus activities and resources.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 LOW
Self Management	<b>Sensitivity to Stress</b>	Tendency to feel frustrated, discouraged, or upset when under pressure or burdened by demands	Find managing coursework difficult, are stressed and often unable to cope with the demands of school and daily life	<ul style="list-style-type: none"> <li>Seek out social support.</li> <li>Develop adaptive strategies to manage academic stress or pressures.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 LOW
	<b>Test Anxiety</b>	General reactions to test-taking experiences, including negative thoughts and feelings (e.g. worry, dread)	Have difficulty managing test-related stress and experience negative thinking and anxiety before, during, and after a test	<ul style="list-style-type: none"> <li>Determine the cause and symptoms of your anxiety.</li> <li>Regain control of thoughts and emotions in the face of stressful situations.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 LOW
	<b>Academic Self-Efficacy</b>	Belief in one's ability to perform and achieve in an academic setting	Have some doubt about academic abilities, may lack confidence in skills, and feel slightly unprepared for the demands of school	<ul style="list-style-type: none"> <li>Reflect on skills and methods used in the past to overcome challenges.</li> <li>Employ strategies to work effectively in order to build confidence.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 MODERATE
Social Support	<b>Institutional Support</b>	Attitudes about and tendency to seek help from established resources	Are prepared to ask for help, are aware of available resources, and take advantage of support services to succeed in school	<ul style="list-style-type: none"> <li>Continue to ask questions to serve as a model for other students.</li> <li>Share knowledge of campus resources with other students.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 HIGH
	<b>Barriers to Success</b>	Financial pressures, family responsibilities, conflicting work schedules, and limited institutional knowledge	Have a limited network of support and are not always sure of whom to talk to when a problem occurs	<ul style="list-style-type: none"> <li>Work on a willingness to make sacrifices in order to do well academically.</li> <li>Identify support systems and reach out when necessary</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 MODERATE
	<b>Connectedness</b>	A general sense of belonging and engagement	Sometimes feel a strong sense of belonging, feel somewhat close to others, and relate to people inside and outside the classroom	<ul style="list-style-type: none"> <li>Work on your ability to relate to peers on campus.</li> <li>Increase your level of engagement in college life and campus events.</li> <li>For more strategies, click <a href="#">here</a>.</li> </ul>	 MODERATE

### Positive Self-Talk Exercise

It is not uncommon to have thoughts and beliefs about ourselves run through our minds. When the thoughts are positive, it can lead to feeling a sense of achievement. However, if the thoughts tend to be negative, they can begin to get in the way of one's successes.

Thus, it's important to replace the negative (and, in most cases, untrue) thoughts and beliefs about yourself with positive ones. For example, you may think, "I'll never understand algebra." Instead, turn that around and say to yourself, "I can learn algebra."

Even highly successful people—athletes, executives, and other professionals—use positive self-talk. It helps to maintain their confidence and leads them on the road to continued success.

Some tips on positive self-talk are listed below.

- Use active "I" statements, like "I am...," "I will...," and "I can..."
- Avoid negative words like "no," "not," "never," "can't," "don't," and "won't."
- Make your statements short and clear.
- Believe what you say – it's true!

On the next page, you will find an exercise designed to help you practice using positive self-talk.