



Professional Development Institute

Flex Course Syllabus

Solving Core Executive Function Challenges (K-12)

PDI Course Number: 165T02

UCSD Course Number: EDUC42624

If you would like information about receiving post-baccalaureate (graduate) credit for completing this course, [please click here](#).

Course Timeline

Participants have one year to complete the course. Participants must spend a minimum of three weeks in this course.

Course Description

Do your students struggle with specific executive functions? Are you looking for effective strategies to improve students' executive function skills so they are more capable in the classroom? Students with executive function challenges benefit from being taught specific skills that, when implemented, can really improve their academic performance. This online professional development course for teachers takes a deep dive into the three core executive functions of working memory, cognitive flexibility, and inhibition control so that they can better guide their students to sustainable learning. The course begins by examining both the metacognitive and social-emotional strands of executive function, including the important role that motivation plays in it. From there, the course takes a deep dive into the three core executive functions, where teachers examine the pivotal role that working memory plays in learning and how attention issues can diminish its impact. Next, teachers explore how flexible thinking leads to metacognition, self-regulation, and self-evaluation, all important executive function skills. Specific strategies to strengthen students' inhibitory control are explored next, as this can improve classroom management struggles. The importance of organization is also explored, including several strategies to boost students' time and task management skills. Last, but certainly not least, teachers explore how to support and strengthen their students' executive functions in the content areas of mathematics, reading, and writing. By the end of this continuing

education course, teachers will feel more confident in their quest to leverage best executive function practices as they guide their students to sustainable learning.

Educational Outcomes

1. Teachers will understand what executive function (EF) is, and they will begin to explore its three core dimensions (working memory, cognitive flexibility, and inhibition control).
2. Teachers will understand the role that executive functions play in the learning process, and they will examine how the trauma of the COVID-19 pandemic severely impacted students' EF skills.
3. Teachers will explore how the three core EF skills connect across all the content areas.
4. Teachers will learn why it is important to teach EF skills throughout all the content areas.
5. Teachers will learn how each of the three core executive functions (working memory, cognitive flexibility, and inhibition control) progress across one's lifetime and how each of the three core skills align to the content areas.
6. Teachers will explore the science behind motivation, and they will learn about some promising practices to strengthen it, as backed by reading science.
7. Teachers will understand what self-efficacy consists of and how it relates to student motivation.
8. Teachers will explore the role that working memory plays in learning, including what its limitations are and how to measure it.
9. Teachers will understand the effects that a poor working memory may have in terms of having a sense of time, understanding past, present, and future events, being able to be self-aware of one's own actions, and one's abilities as it relates to reading, writing, and math.
10. Teachers will explore a variety of strategies to support working memory in the classroom so that student learning can be further strengthened.
11. Teachers will understand the components of attention (alertness, selection, and the abilities to sustain and shift) and the role that each of them plays in working memory.
12. Teachers will explore a variety of strategies as they relate to each component of attention (alertness, selection, and the ability to sustain and shift) so that students' attention is piqued, causing them to be better able to follow through to task completion.
13. Teachers will learn what cognitive flexibility is, including how it relates to executive functioning and its importance in the learning process.
14. Teachers will explore several strategies to reinforce cognitive flexibility in their K-12 students.
15. Teachers will understand the relationship between metacognition and executive function skills, including what it really means to think about one's thinking.
16. Teachers will explore the concept of mindfulness, and they will learn specific strategies for incorporating it into their K-12 classrooms.
17. Teachers will learn about the different types of metacognitive knowledge (declarative, procedural, conditional), and they will understand how each of them relates to self-regulated learning.
18. Teachers will understand the important role that metacognition plays in self-regulation and self-evaluation.

19. Teachers will explore a variety of metacognitive strategies, all of which are designed to help their students become self-regulated and self-evaluative learners.
20. Teachers will learn about the four different levels of inhibitory control (behavioral, motor, emotional, cognitive), including how each of them relates to distractibility, impulsivity, hyperactivity, and emotional control in the K-12 classroom.
21. Teachers will explore strategies to help students stop and think before acting, thereby delaying their gratification and minimizing their impulsiveness.
22. Teachers will explore strategies to strengthen inhibitory control across all four levels (behavioral, motor, emotional, cognitive) in the classroom, including, but not limited to, early intervention, flexible seating, using class and individual schedules, providing visual cues, and establishing and maintaining a supportive classroom environment.
23. Teachers will learn what adverse childhood experiences (ACES) are and how positive childhood experiences can be used to offset the negative effects of them.
24. Teachers will learn ten strategies for increasing assets at the school level as a way to combat the negative effects of ACES.
25. Teachers will understand how organization relates to executive function, including how beneficial it can be to students' overall learning.
26. Teachers will learn how understanding time provides a basis for learning how to improve one's time and task management skills.
27. Teachers will explore a variety of tools (e.g., time audits, Eisenhower Matrix, planners, Pomodoro technique, etc.) to help guide their students to understand exactly where they spend their time and how they can learn to prioritize tasks by importance and urgency.
28. Teachers will explore several time management tips to use with younger students, including relying on picture schedules, visual timers, project mapping, task checklists, and how to eliminate distractions, all in an effort to increase their organizational executive function skills.
29. Teachers will learn about the eleven different types of play that fall into stages as a child develops, including how they relate to the core executive functions.
30. Teachers will explore specific strategies to incorporate structured play into the K-12 classroom.
31. Teachers will explore a variety of strategies to support and strengthen students' working memory, cognitive flexibility, and inhibition control as it relates to mathematics.
32. Teachers will explore a variety of strategies to support and strengthen students' working memory, cognitive flexibility, and inhibition control as it relates to foundational reading skills (phonemic awareness, phonics, vocabulary) and more robust and complex reading skills (fluency, comprehension) before, during, and after reading.
33. Teachers will explore a variety of strategies to support and strengthen students' working memory, cognitive flexibility, and inhibition control as it relates to writing using Sedita's Writing Rope as its basis.

Instructional Media

- Online Discussions
- Online Engagement
- Online Collaboration

- Instructor Feedback
- Instructor Interaction
- Online Resources and Websites
- Supplemental Instructional Materials
- Printable Classroom Resources

Evaluation

- Test #1 (5% of final grade)
- Test #2 (5% of final grade)
- Test #3 (5% of final grade)
- Test #4 (5% of final grade)
- Test #5 (5% of final grade)
- Autobiography and Goals for the Course (10% of final grade)
- Article/Video Reflection (15% of final grade)
- Course Collaboration/Share Ideas with the Class (10% of final grade)
- Cumulative Assignment/Project: Design Three Activities to Promote the Core Executive Functions (20% of final grade)
- Culminating Practicum (20% of final grade)

Topical Outline

Unit One

- Understanding Executive Functions
- Executive Functions: Three Core Areas
- The Role of Motivation in Executive Functions
- **Assignment #1**
Write an autobiography including information about yourself, your grade level, and what you specifically hope to learn about fostering and supporting students' executive functions so that sustainable learning can be achieved across mathematics, reading, and writing. Your autobiography should be a minimum of three paragraphs.
- **Test #1**

Unit Two

- The Role of Working Memory in Learning
- The Effects of Poor Working Memory
- The Role of Attention in Working Memory
- **Assignment #2**
As an educator, it is important to be aware of the research, studies, and professional work done in the field. In the course, you will find an article and video that are relevant

to the specific course content. Read the article and then write an essay with your thoughts.

- **Test #2**

Unit Three

- Flexible Thinking Skills
- The Importance of Metacognition
- Self-Regulation and Self-Evaluation
- **Assignment #3**

Online Discussion Board Participation/Engagement: Please post a tip, strategy, or idea that specifically relates to fostering and supporting students' executive functions so that sustainable learning can be achieved across mathematics, reading, and writing. The tip, strategy, or idea that you share needs to make a difference to other teachers in their own classrooms. Your assignment should be a minimum of three paragraphs and detailed enough for another teacher to follow easily. This is a great opportunity to share and collaborate with other teachers at your grade level around the country. Take time to review and respond to other postings that are relevant to your classroom population in order to gain effective ideas to use immediately in your classroom.

- **Test #3**

Unit Four

- Resisting Distractions to Support Comprehension
- Strategies to Strengthen Inhibitory Control
- Positive Childhood Experiences as an Offset to Adverse Childhood Experiences
- **Test #4**

Unit Five

- Why Organization Matters
- Time and Task Management Skills
- Social Play and Executive Functions
- **Test #5**

Unit Six

- Supporting and Strengthening EF Skills in Mathematics
- Supporting and Strengthening EF Skills in Reading
- Supporting and Strengthening EF Skills in Writing
- **Assignment #4**

Create an activity for each of the three different core executive functions (working memory, cognitive flexibility, and inhibition control), with explicit instructions in whatever capacity you may interact with students in grades K-12. Each core executive function should be "matched" to a different content area or topic so that the activities

are diverse in scope. Each activity should be unique and comprehensive enough so that another teacher can easily use it. All activities must be based on best practices as they relate to executive function, and while there is bound to be some overlap, you may not duplicate any of the core executive functions over the three activities. Follow the example in the assignment. To obtain full credit, be sure to follow all the parameters set forth in Assignment 4.

- **Assignment #5**

The culminating practicum is a three-step process. (1) In the first assignment, you were asked what goals you had and what you hoped to learn from the course. Think back to your original goals for this course. Write a minimum two-paragraph reflection specifically describing how what you learned can be used to help you reach those goal(s). (2) Next, write a minimum three-paragraph plan that specifically describes the ways in which you intend to implement a particular strategy you learned in this course into your own teaching situation. (3) Last, write a minimum two-paragraph reflection describing a student you have or have had in the past. Then, discuss how the strategies you learned in this course will specifically benefit that student as you put your plan into action.

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